

# Optical Grade Lithium Tantalate LiTaO<sub>3</sub> Single Crystal and Wafer

LiTaO<sub>3</sub> single crystal exhibits excellent electro-optical, piezoelectric and pyroelectric properties. It has been used widely in pyroelectric device and color TV. MTI specializes in optical grade LiTaO<sub>3</sub> crystal featured with low impurity content, high performance and provides the most competitive price.

## Typical Properties

Materials Purity:	> 99.995%	
Crystal Structure:	Rhombohedral space group 3M	
Lattice Constant:	(Hex) a = 5.154 Å c = 13.783 Å	
Melting Point:	1650 °C	
Density:	7.45 g /cm <sup>3</sup>	
Curie Point:	610 °C	
Hardness:	5.5 - 6 Moh	
Thermal Expansion:	a <sub>a</sub> = 16.1 x 10 <sup>-6</sup> / k	a <sub>c</sub> = 4.1 x 10 <sup>-6</sup> / k
Resistivity:	10 <sup>15</sup> Ω.m	
Dielectric Constant:	ε <sup>s</sup> <sub>11</sub> / ε <sub>0</sub> : 39 ~43	ε <sup>s</sup> <sub>33</sub> / ε <sub>0</sub> : 42 ~43
	ε <sup>t</sup> <sub>11</sub> / ε <sub>0</sub> : 51 ~54	ε <sup>t</sup> <sub>11</sub> / ε <sub>0</sub> : 43 ~46
Color:	colorless	
Transmission Range	0.4~5.0 μm	
Refractive Index	η <sub>o</sub> = 2.176 η <sub>e</sub> = 2.180 @ 633 nm	

## Standard Specifications of Crystal Boules and Wafers

Item No	Products	Orientation	Standard Dimension
LTB	Crystal Boule	X, Y or Z axis +/-1°	2" dia x 50 mm L 3" dia x 50 mm L
LTW	EPI Polished wafer two sides polished Ra < 10 Å	X, Y, Z, or rotated Y cut with or without Flat	10x10x0.5mm 2" dia x 0.5mm 3" dia x 0.5mm 3" dia x 1.0 mm



We always keep standard wafer in stock for immediate delivery. Special size and size of wafers are available upon request

### **MTI Corporation**

860 South 19<sup>th</sup> Street, Richmond, CA 94804, USA

Tel: (510)525-3070 Fax: (510)525-4058 E-mail: [info@mtixtl.com](mailto:info@mtixtl.com) Website: [www.mtixtl.com](http://www.mtixtl.com)