

# LiTaO<sub>3</sub>



## DESCRIPTION

LiTaO<sub>3</sub> crystals, also known as lithium tantalate crystals, or LT crystals for short, are electro-optical crystals with excellent overall performance. LiTaO<sub>3</sub> crystals have the advantages of high optical damage threshold, low birefringence, transmission bandwidth, high optical transmittance, high sensitivity, wide transparency range, large electro-optical coefficient, no easy deliquescence, and stable chemical and physical properties, and are used in optical storage, transient recording, high-speed holographic cameras, and other related fields. It has a wide range of applications in related fields such as optical storage, transient recording, high-speed holographic cameras, etc. With the increasing Li/Ta in LT crystals, its physical properties are also improved to different degrees, which is conducive to improving the performance of various functional devices and making them used in many important fields such as laser TV, laser ranging, radar, infrared military countermeasures, medical treatment, and atmospheric environment monitoring, and it is likely to open up new application fields.

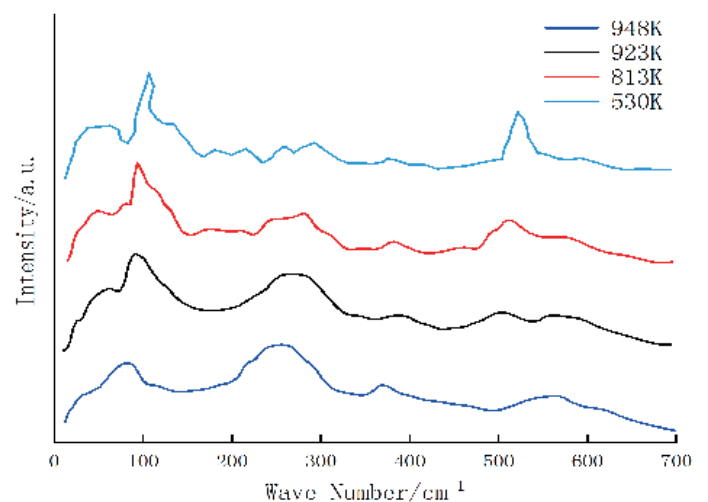
## FEATURES

- High sensitivity
- Wide range of transparency
- Large electro-optical coefficient
- Not susceptible to deliquescence
- High optical damage threshold
- Stable chemical and physical properties

## APPLICATIONS

- Optical Storage
- Transient recording
- High-speed holographic camera

## SPECTRA



# LiTaO<sub>3</sub>

## CRYSTAL SPECIFICATIONS

Crystal Structure	Triangle, space group R3c, point group 3m
Cell parameters	a=5.154Å,c=13.781Å
Melting point	1650°C
Curie temperature	607°C
Mohs Hardness	~ 5.5
Density	7.46g/cm <sup>3</sup>
Dielectric constant	e <sub>a</sub> =54 e <sub>c</sub> =43(@100KH)
Transmission range	400-4500nm
Electro-optical coefficient	r <sub>33</sub> =30.4pm/V
Refractive index at 632.8 nm	n <sub>o</sub> =2.176,n <sub>e</sub> =2.180
Nonlinear optical coefficient	d <sub>22</sub> =2.0(P/m/V @1064nm)
	d <sub>31</sub> =-1(P/m/V @1064nm)
	d <sub>33</sub> =-21(P/m/V @1064nm)
Pyroelectric coefficient	~ 2.3 × 10 <sup>-4</sup> C/°C/m <sup>2</sup>
Optical uniformity	~ 10 <sup>-5</sup>
Absorption loss	<0.15%/cm

