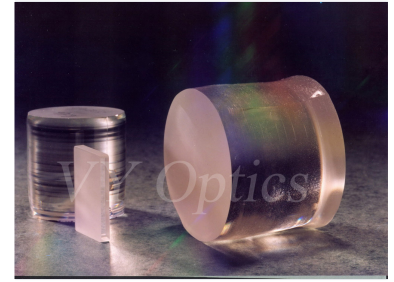


# Lithium Niobate Crystal Lens for Optical Applications

Lithium Niobate crystal lens is used in optical parametric oscillators and as frequency doublers. The lens is suitable for quasi-phase-matched devices due to its electro-optic and acousto-optic coefficients.



## Product Overview

### Lithium Niobate (LiNbO<sub>3</sub>) Crystal Lens

The Lithium Niobate (LiNbO<sub>3</sub>) crystal lens is a high-performance optical component widely utilized as frequency doublers for wavelengths greater than 1 mm. It is also essential for optical parametric oscillators (OPOs) pumped at 1064 nm and various quasi-phase-matched (QPM) devices. Renowned for its large Electro-Optic (E-O) and Acousto-Optic (A-O) coefficients, this crystal is precision-engineered to provide exceptional refractive index and transmission characteristics.

## Physical Properties

Density	4.64 g/cm <sup>3</sup>
Melting Point	1250 °C
Curie Point	1142 °C
Mohs Hardness	5.5

## Crystal Structure

### Lattice Parameters

- a = b = 5.148
- c = 13.863

Crystal Structure	Trigonal, point group 3m
-------------------	--------------------------

## Optical & Dielectric Constants

### Dielectric Constants

<b>85</b> e <sub>11</sub> /e <sub>0</sub>	<b>29.5</b> e <sub>33</sub> /e <sub>0</sub>
--	--

## Thermal Properties

### Thermal Expansion Coefficient

Coefficient	Value
a <sub>1</sub> =a <sub>2</sub>	2x10 <sup>-6</sup> /°C
a <sub>3</sub>	2.2x10 <sup>-6</sup> /°C

Thermal Conductivity	38 W/m°C
----------------------	----------

## Mechanical & Piezoelectric Constants

### Piezoelectric Strain Constants

Constant	Value
d22	$2.04 \times 10^{-11} \text{ C/N}$
d33	$19.22 \times 10^{-11} \text{ C/N}$

### Elastic Stiffness Constants

Constant	Value
CE11	$2.04 \times 10^{11} \text{ N/m}^2$
CE33	$2.46 \times 10^{11} \text{ N/m}^2$