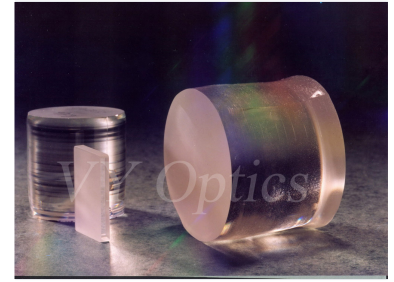


Lithium Niobate Crystal Lens for Optical Applications

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 (LiNbO₃) Crystal Lens

The Lithium Niobate (LiNbO₃) 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 ³
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
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Optical & Dielectric Constants

Dielectric Constants

85

e₁₁/e₀

29.5

e₃₃/e₀

Thermal Properties

Thermal Expansion Coefficient

Coefficient	Value
a ₁ =a ₂	2x10 ⁻⁶ /°C
a ₃	2.2x10 ⁻⁶ /°C

Thermal Conductivity	38 W/m°C
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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	$2.46 \times 10^{11} \text{ N/m}^2$