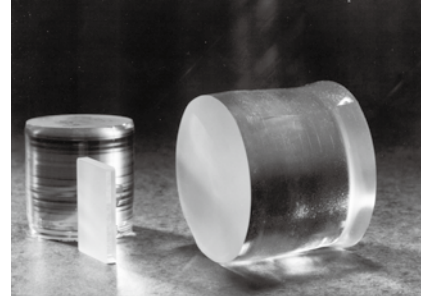


Lithium Niobium(LiNbO₃)

Description

Lithium niobium crystal (LN) is widely used in SAW filter, optical waveguide, photoelectricity modulator, frequency multiplication transducer and information storage as a functional crystal with excellent physical feature of anti high temperature and anti canker. It has stable mechanical performance, and will appear different special feature after being doped differently.



Specification A

Crystal class	Trigonal
Point group	3m
Space group	R3C
Lattice parameter(nm)	a=0.5248 c=1.3863
Melting point(°C)	1250
Density (g/cm ³)	4.64
Curie temp.(°C)	1142
Hardness(Mohs)	5
Dielectric constant	ϵ_{11}/ϵ_0 85 ϵ_{33}/ϵ_0 29.5
Piezoelectric strain constant ($\times 10^{-11} \text{c/n}$)	d ₂₂ 2.04 d ₃₃ 19.22
Elastic stiffness constant ($\times 10^{11} \text{c/n}$)	C ₁₁ E 2.04 C ₃₃ E 2.46
Transparency range(nm)	370 ~ 5000
Refractive index(632.8nm)	n ₀ =2.286, n _e =2.200
Electro-optic coefficient ($\times 10^{-12} \text{m/v}$)	γ_{33} =32
Refractive index grads ($\times 10^{-15}/\text{cm}$)	≤ 5
Transmittance (623.8nm)	$\geq 68\%$

Specification B

Parameter	Wafer				Rectangular slice	
Typical size	φ40.0	φ50.8	φ76.2	φ100	35×2	45×2
Typical length	≤300	≤150	≤100	≤50	300	150
Typical orientation	X, Y, Z, 127.86O Y, 64O Y, 135O Y, 41O Y				Z	
Typical thickness	0.2 ~ 1.0					
Ref. Flat orientation	X, Y					
Ref. Flat width	16+2	18+2	22+2	32+2		
Front side polishing	0.016 ~ 0.001					
Back side lapping	0.3 ~ 10					
Flatness	≤10		≤10 ≤15			
Bow	≤20	≤40	≤50			