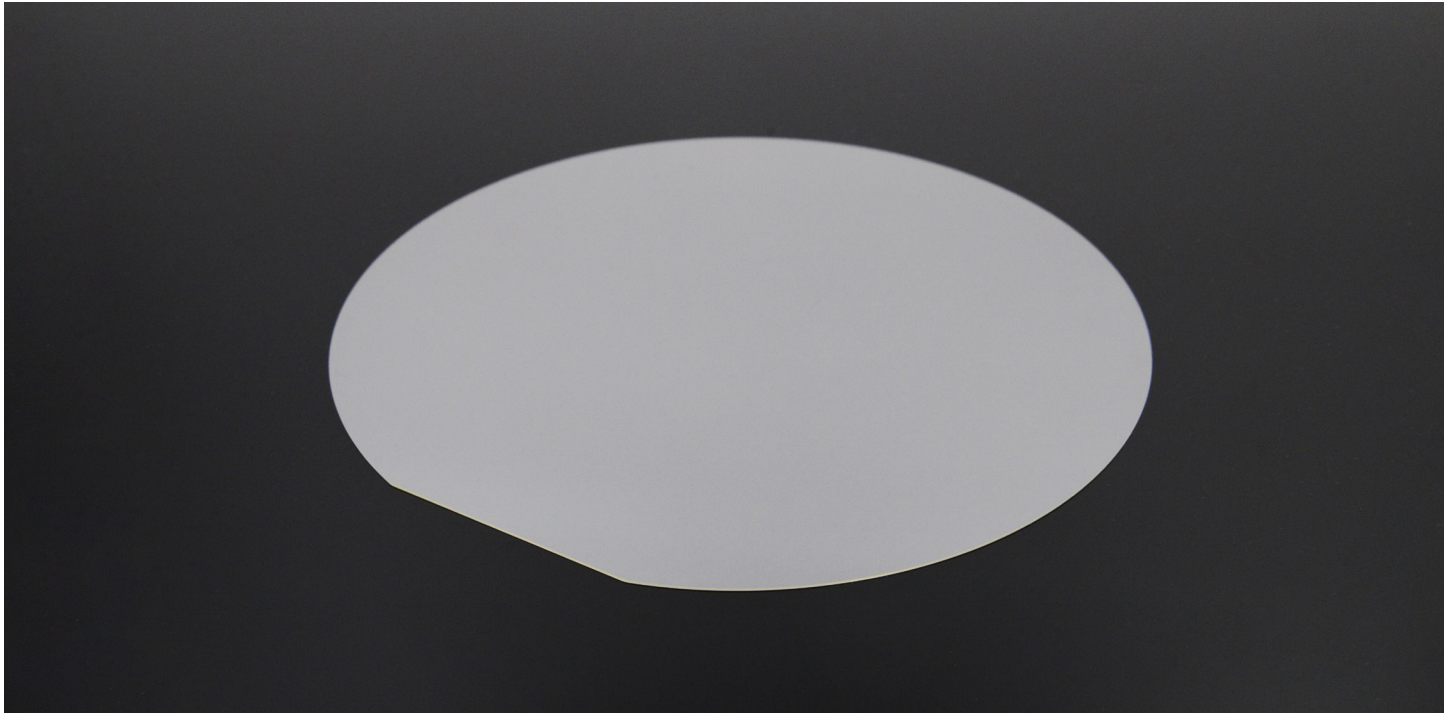


LITHIUM NIOBATE WAFER

Lithium niobate (LN), a compound of niobium, lithium, and oxygen, is a multifunctional material with high chemical and heat stability. Its most attractive property is its high refractive index (>2.3) compared with regular glass wafers (1.5). LN's high refractive index enables a large FOV for waveguide design. LN wafers are an ideal substrate for waveguides, modulators, and sensors. Coherent has more than 10 years of experience in wafer manufacturing and can provide diverse wafers with different materials, diameters, and thicknesses to meet customers' requirements.



FEATURES

- High refractive index (>2.3)
- 6 inch / 8 inch available
- RGB visible spectrum available
- Outstanding mechanical properties

APPLICATIONS

- Waveguides
- Modulators
- Sensors

Specifications

Material Specification		Control Device
Material	Congruent: LiNbO ₃	Certificate of material
Material quality	Bubble or inclusion <100 μm Qty <8, 30 μm < bubble size < 100 μm	Green laser
Orientation	Y cut ±0.2°	X-ray orientator
Density	4.65 g/cm ³	Densimeter
Curie temperature	1142 ±1°C	Supplier test
Transparency	>95% for 10 mm light@450-700 nm	Spectrometer
Fabrication Specification		
Diameter	150 mm ±0.2 mm	Micrometer
Thickness	350 μm ±10 μm	Micrometer
Flatness Total thickness variation(TTV) Local thickness variation (LTV) Bow Roughness	<1.3 μm Warp < 70 μm @ 150 mm wafer <70 μm @ 150 mm wafer Rq ≤0.5 nm (RMS value by AFM)	Flatmaster MSP Flatmaster MSP Flatmaster MSP AFM or Newview
Surface quality	Scratch-dig: 40-20 based on MIL-PRF-13830B	Microscope
Particles	Non-removable particles: 100-200 μm ≤3 particles, 20-100 μm ≤20 particles	Microscope
Chip	<300 μm (full wafer, without exclusion zone)	Microscope
Crack	No crack (full wafer)	Microscope
Contamination	No non-removable stain (full wafer)	Microscope
Parallelism	<30 arc second	Zygo interferometer
Orientation refer flat (x-axis)	47 ±2 mm	Digital projector