

# Lithium Niobate

## optical waveguide substrates

Crystal Technology, the world's leader in lithium niobate technology, offers four standard optical grade substrates for optical waveguide applications. Delivery is from stock.

Our manufacturing achieves the most consistent quality and complete traceability starting with high purity chemicals, through crystal growth and substrate fabrication, to final quality control inspection.

Careful quality control throughout the entire manufacturing process as well as continuing research ensures the highest quality lithium niobate available. Crystal Technology supplies optical substrates to successful manufacturers of integrated optic circuits.



### SPECIFICATIONS

Composition	Congruent within 0.02 mol% $\text{Li}_2\text{O}$ ; typical compositional uniformity is better than $\pm 0.005$ mol% $\text{Li}_2\text{O}$
Curie Temperature	$1142.3 \pm 0.7^\circ\text{C}$ by the dielectric technique
Purity	Typically less than 2 ppm for each transition metal (including iron) in starting chemicals and in grown chemicals
Nominal Birefringence	$n_o - n_e = 0.085 \pm 0.001$
Birefringence Uniformity	Typically $\pm 0.00007$
Scatter	Typically free of scatter centers under optical microscopy
Axes Orientation	$\pm 30$ arc minutes; see reverse side for orientation of reference flats.
Surface Finish	All faces to a 10/5 scratch/dig finish per MIL-O-13830A. Flatness for the 100 mm diameter wafers is 15 microns T.T.V. while the 76.2 mm wafers are flat to 10 microns T.T.V.

### STANDARD SIZES

Size	Part Number
<b>x-cut</b>	
76.2 mm diameter x 1.0 mm (x)	99-00630-01
100 mm diameter x 1.0 mm (x)	97-01763-10
<b>z-cut</b>	
76.2 mm diameter x 1.0 mm (z)	99-60011-01
100 mm diameter x 1.0 mm (z)	97-01514-10



**Crystal Technology, Inc.**

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