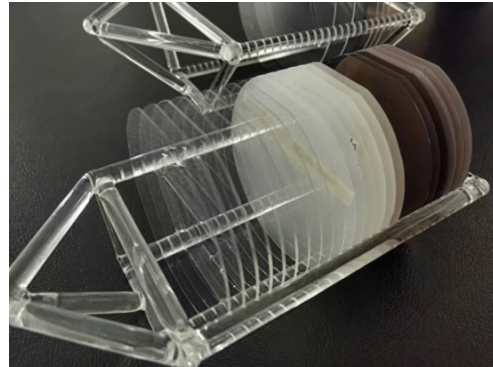


CRYSTAL WAFERS & SUBSTRATES

LiTaO₃ Optical Wafers

Product Brochure & Technical Reference

Lithium tantalate wafers for optical, piezoelectric and pyroelectric component projects. Specify the exact orientation, wafer geometry and surface requirements for the application.



Reference product image. Shown geometry is illustrative.

Material reference properties / options

Parameter	Typical Value / Option
Material	LiTaO ₃ single crystal
Curie temperature	Approx. 603 +/- 2 C
Cutting angle	X, Y, Z, and custom cuts
Orientation tolerance	<= +/-15 arcmin, or tighter by review
Thickness	0.18-0.5 mm or more; custom thickness available
Thickness tolerance	<= +/-0.025 mm, depending on wafer size and thickness
Orientation flat	According to ATR Crystal standard or customer drawing
Optical doping	Zn, MgO, Fe, or other options by review

Reference values and options for selection. Confirm the material grade, geometry, test conditions and acceptance criteria for the quoted configuration.

CRYSTAL WAFERS & SUBSTRATES

Configuration & quotation

Define the component around your application

Application examples: SAW devices, RF filters, and acoustic wave substrates; Pyroelectric infrared detectors and thermal sensing elements; Electro-optic modulators and photonic components

Available LiTaO₃ Wafer Options

Item	Available Option	Design Notes
Diameter	2 inch, 3 inch, 4 inch, 6 inch	Availability depends on orientation, thickness, grade, and quantity.
Orientation	X-cut, Y-cut, Z-cut, and custom cuts	SAW and optical applications may require specific cut angle and flat orientation.
Thickness	0.18 mm and above; common values include 0.25 mm, 0.5 mm, and 1.0 mm	Thickness tolerance and TTV should be confirmed with wafer diameter.
Surface type	SSP or DSP	Single-side or double-side polishing should be selected according to device process.
Doped options	Fe, Zn, MgO doped LiTaO ₃ wafers	Doped materials should be confirmed by application, availability, and drawing.
Product form	Wafers, boules, blanks, customized optics	Custom shapes and optical components can be reviewed case by case.

Product Parameters of Lithium Tantalate Wafers

Parameter	Typical Value / Option
Diameter	2 inch, 3 inch, 4 inch, 6 inch
Diameter tolerance	$\leq \pm 0.20$ mm
Primary flat length	16 mm, 22 mm, 32 mm, or custom flat by wafer standard
TTV	Typically 1-5 μ m depending on wafer size, thickness, and grade
Bow	Typically within ± 25 -40 μ m depending on wafer size and thickness
Warp	≤ 35 μ m, depending on wafer size and grade
Surface type	Single-side polished, SSP; double-side polished, DSP
Polished side Ra	< 0.5 nm
Polished side surface quality	S/D 20/10
Edge criteria	Compliant with SEMI M1.2 or IEC 62276 reference, depending on order requirement
Quality	Free of cracks; bubbles and inclusions to be controlled by agreed inspection criteria
Wafer surface contamination	None by agreed inspection condition
Particles	Particles larger than 0.3 μ m: ≤ 30 , if specified in the order
Scratch and chipping	None by agreed inspection criteria
Defects	No edge cracks, scratches, saw marks, or stains by agreed inspection criteria
Packaging	Typically 25 pcs per wafer box, or custom packing on request

Prepare your quotation

RFQ Item	Information to Provide
Application	SAW device, pyroelectric detector, electro-optic component, nonlinear optics, sensor, or custom substrate.
Material and doping	Undoped LiTaO ₃ , MgO:LiTaO ₃ , Fe:LiTaO ₃ , Zn:LiTaO ₃ , or other doped material requirement.
Orientation	X-cut, Y-cut, Z-cut, rotated cut, orientation tolerance, primary flat direction, and flat length.
Wafer geometry	Diameter, thickness, thickness tolerance, TTV, bow, warp, bevel, and edge criteria.
Surface requirement	SSP or DSP, Ra, scratch-dig, particle limit, contamination limit, and visual defect criteria.
Order information	Quantity, wafer box requirement, inspection report requirement, packaging, delivery schedule, and drawing.

Reference values and options for selection. Confirm the material grade, geometry, test conditions and acceptance criteria for the quoted configuration.

Send drawings for engineering review

sales@atrscintillator.com | +86 17796747312

Open product and inquiry page | Hangzhou, Zhejiang, China