

Black Lithium Tantalate Wafer

An innovative technology in LiTaO₃ production involves reduction processes, resulting in "black" wafers that are devoid of pyroelectric discharge, ideal for high-frequency SAW applications. To produce these reduction wafers, LiTaO₃ crystals undergo chemical reduction in a controlled atmosphere. This process effectively eliminates the pyroelectric effect while maintaining the material's key properties such as Curie temperatures and piezoelectric characteristics. The resulting black LiTaO₃ wafers not only neutralize electrical charges but also exhibit considerable reduction in optical transmittance.

These black LiTaO₃ wafers offer distinct advantages, particularly in applications where pyroelectric discharge prevention and high-frequency operation are critical. They are essential in advanced SAW devices, contributing to improved performance and reliability in various technological applications.

Product Parameters

Material	LiTaO₃ wafers (White or Black)	
Curie Temp	603±2°C	
Cutting Angle	X/Y/Z/X112Y/Y36/Y42/Y48/etc	
Diameter/size	3"/4"/6" LT wafer	
Tol(±)	<0.20 mm	
Thickness	0.18 ~ 0.5mm or customer specific	
Primary Flat	22mm /32mm /42.5mm /57.5mm	
LTV (5mmx5mm)	<1µm	
TTV	<3µm	
Bow	-30<bow<30	
Warp	<40µm	
PLTV(<0.5um)	≥95%(5mm*5mm)	
Orientation Flat	All available	
Surface Type	Single Side Polished /Double Side Polished	
Polished side Ra	<0.5nm	
Back Side Criteria	General is 0.2-0.5µm or customized	
Edge Criteria	R=0.2mm or Bullnose	
Wafer Surface Criteria	Transmissivity	general:5.9x10 ⁻¹¹ <s<2.0*10 ⁻¹⁰ at 25°C
	Contamination,	None
	Particles ϕ>0.3 µ m	<= 30
	Scratch , Chipping	None
	Defect	No edge cracks, scratches, saw marks, stains

Please contact us for customer specific requirements and questions