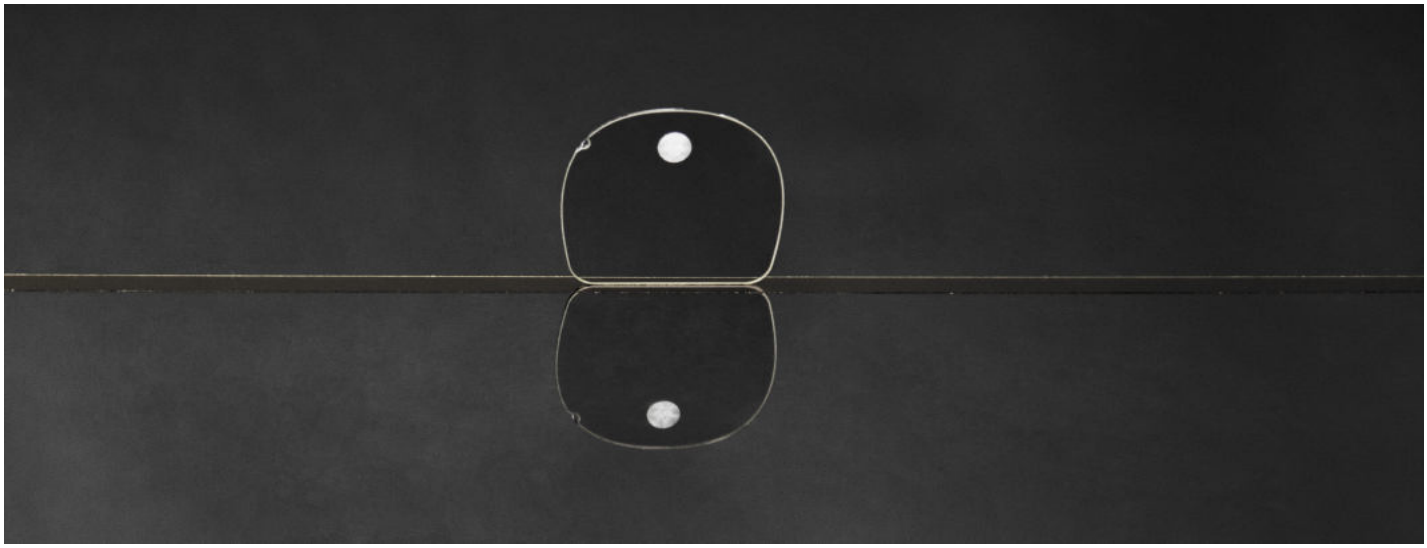
$KTaO_3$

Potassium Tantalate ($KTaO_3$) Crystal Substrate



DESCRIPTION

$KTaO_3$ Single Crystal is a novel crystal having a perovskite structure and pyrochlore, has broad market prospects in superconducting thin film applications. Since the $KTaO_3$ Crystals from the absolute zero to its melting point (1645K) no phase change, and the unit cell parameters good match with superconductor YBCO.

FEATURE

- Perovskite and pyrochlore structure
- Superconducting thin films

APPLICATION

- A laser modulator
- A digital-type deflector
- Semiconductor devices

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$KTaO_3$

PARAMETER

Physical Properties

Product Name	KTaO3 single crystal substrate/wafer
Crystal structure	Cubic, Perovskite, m3m
Lattice constant	a=3.989Å
Growth method	Top-seeded solution growth(TSSG)
Melting point	~1500°C
Density	7.015 g/cm^3
Mohs hardness	6
Refractive index	2.226@633nm, 2.152@1539nm
Thermal conductivity	0.17 w/m·k@300K
Coefficient of thermal expansion	4.027*10^{-6}/K
Specific heat (temperature JK^{-1}g^{-1})	0.378
Transparent bands (nm)	380~4000

Main Specification

Product Name	$KTaO_3$ substrate
Orientation	<100>±0.5° <110>±0.5° <111>±0.5° Or other off-angle
Standard Size	10x10mm 10x5mm 5x5mm 20x20mm φ1" x 0.5mm Or others
Thickness	0.1mm 0.2mm 0.5mm 1.0mm 2.0mm Or others
Polishing	Fine ground Single side polished Double side polished Roughness: Ra<5A(0.5nm)