

Laser Crystals

NLO Crystals

Birefringent Crystals

AO and EO Crystals

Potassium Titanyl Arsenate (KTiOAsO₄, KTA)

Introductions



Potassium Titanyl Arsenate (KTiOAsO₄), or KTA crystal, is an excellent nonlinear optical crystal for Optical Parametric Oscillation (OPO) application. It has better non-linear optical and electro-optical coefficients, significantly reduced absorption in the 2.0-5.0 μm region, broad angular and temperature bandwidth, low dielectric constants. And its low ionic conductivities result in higher damage threshold compared with KTP.

Basic Properties

Basic properties

Items	Specifications
Crystal Structure	Orthorhombic, point group mm2
Lattice parameter	a=13.125Å, b=6.5716Å, c=10.786Å
Melting Point	1130°C
Mohs Hardness	near 5
Density	3.454g/cm ³
Thermal conductivity	K1: 1.8W/m/K; K2: 1.9W/m/K; K3: 2.1W/m/K

Optical and Nonlinear Optical Properties

Items	Specifications				
Transparency Range	350-5300nm				
Absorption Coefficients	@ 1064 nm <0.05 %/cm @ 1533 nm <0.05 %/cm @ 3475 nm <5%/cm				
NLO susceptibilities (pm/V)	d ₃₁ = 2.76, d ₃₂ = 4.74, d ₃₃ = 18.5, d ₁₅ = 2.3, d ₁₆ = 3.2				
Sellmeier Equation Ni ² =Ai+Biλ ² /(λ ² -Ci ²)-Diλ ²	Index	A	B	C	D
	N _x	1.90713	1.23522	0.19692	0.01025
	N _y	2.15912	1.00099	0.21844	0.01096
	N _z	2.14768	1.29559	0.22719	0.01436
Electro-optical constants(pm/V) (low frequency)	r ₃₃ =37.5; r ₂₃ =15.4; r ₁₃ =11.5				
SHG Phase Matchable Range	1083-3789nm				

Specifications

Crystal length from 0.1mm to 30mm and size up to 15x15x30mm

AR-coating from visible to 3300nm

Re-polishing, re-coating service

Fast delivery (10 working days for polished only, 15 working days for AR-coated)

KTiOAsO₄

Crystal

KTA 01