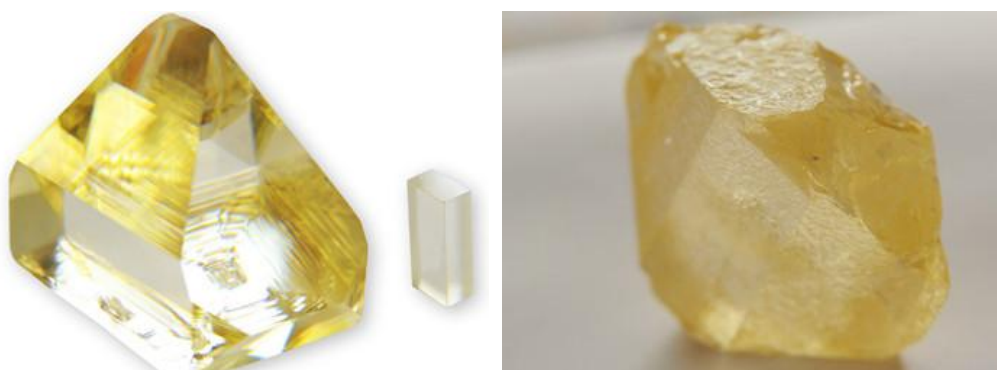


KTA Crystals - Potassium Titanyl Arsenate Crystal

- Crystal length from 0.1-30mm, size up to 15x15x30mm
- AR coating from visible to 3300nm

Potassium Titanyle 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.



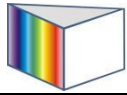
SPECIFICATIONS

Specifications	
Maximum Length	30mm(Aperture-15x15mm)
Dimensional Tolerance	(W+/-0.1mm)x(H+/-0.1mm)x(L+0.2/-0.1mm)
Wavefront Distortion	<Lambda/8@633nm
Chamfer	<0.15mm x 45 搨
Perpendicularity	< 5 arc min
Parallelism	<15 arc sec
Flatness	<Lambda/10 @ 633nm
Surface quality	10/5
AR coating	From visible to 3.3um

Basic Properties

Basic properties	
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					
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 ₁₅ = 3.2				
Sellmeier Equation $n_i^2 = A_i + B_i \lambda^2 / (\lambda^2 - C_i^2) - D_i \lambda^2$ (λ in μm)	index	A	B	C	D
	Nx	1.90713	1.23522	0.19692	0.01025
	Ny	2.15912	1.00099	0.21844	0.01096
	Nz	2.14768	1.29559	0.22719	0.01436
Electro-optical constants(pm/V) (low frequency)	γ ₃₃ =37.5; γ ₂₃ =15.4; γ ₁₃ =11.5				
SHG Phase Matchable Range	1083-3789nm				



Features

- Large NLO and E-O coefficients
- Wide angular bandwidth and small walk-off angle
- Broad temperature and spectral bandwidth
- Lower absorption in the 3-4um range than KTP
- High thermal conductivity
- High damage threshold
- Stable chemical and mechanical properties
- No hygroscopic susceptibility

Applications Notes

- Excellent for Optical Parametric Oscillation (OPO)
- Second Harmonic Generation – SHG@1.083um-3.789um
- Sum and Difference Frequency Generation (SFG and DFG)
- Electro-optical Q-switch and modulation