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KTA Crystal (Potassium Titanyle Arsenate)

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.

Advantages:

- Large nonlinear optical and electro-optical coefficients
- Wide angular bandwidth and small walk-off angle
- Broad temperature and spectral bandwidth
- Low dielectric constants, loss tangent and ionic conductivities (much less than that of KTP)
- High damage threshold
- Lower absorption and high transmission in the 3-4 μm spectrum range than KTP.
- Highly resistant to high intensity laser radiation

KTA's Applications

- An excellent NLO crystal developed mainly for Optical Parametric Oscillation (OPO)
- Frequency Doubling (SHG @1083nm-3789nm)
- Sum and Difference Frequency Generation (SFG)/(DFG)
- NCPM cut 1064--->1533+3475 (type I Theta=90deg., phi=0deg.)

HGO offer KTA specification:

Tolerance of cutting angle	$\Delta\theta \leq \pm 0.25^\circ, \Delta\varphi \leq \pm 0.25^\circ$
Tolerance of dimension	Dimension ± 0.1 mm, L: ± 0.1 mm
Flatness	$\lambda/8$ @ 632.8nm
Wavefront distortion	$\lambda/8$ @ 632.8nm
Surface quality	10/5 per MIL-O-13830A
Parallelism	10"
Perpendicularity	5'
Bevel/chamfer	<0.1mm@45deg.
Chips	<0.1mm
CA	>95%
Coating	AR/HR coating Upon customer' s request
Damage Threshold	750MW/CM ² at 1064nm, TEM00, 10ns, 10Hz
Warranty	One year under proper use

