HGTR KTP Crystals

High Gray Track Crystals

Raicol was the first to develop High Gray Track Resistance KTP crystals. Our unique crystal growth recipe enables high power density with KTP's high SHG coefficient. The gray tracks occur due to induced color centers in the KTP crystal that have broad optical absorption in the visible and near-infrared wavelengths. Gray tracks are generated when a crystal is subjected to high average power pulsed lasers or CW laser irradiation. The process of the gray track formation is cumulative and leads to deterioration in transparency and harmonic conversion.

Technical Data

- Average output power density at 532 nm up to 5 kW/ cm²
- Nonlinear coefficient 4 times higher than LBO
- Low absorption at visible and near infrared wavelengths
- Broad temperature bandwidth
- Non-hygroscopic material
- Small walk-off and wide angular bandwidth

Specifications

Aperture	Up to 5×5
Absorption Coefficient	<10@1064nm <50@532nm
Length	Up to 15 mm
Flatness	Up to λ/10 @633nm
Perpendicularity	<10 arc min.
Average Power Density	4000 W/cm2 @1064 2500 W/cm2 @532
Laser-Induced Damage Threshold	1,500 MW/ cm² @1064 nm, for 10 ns pulses 10 pps
Parallelism	20 arc sec.
AR Coating	DBAR
Scratch/Dig	10/5

Functionality

- Optical parametric oscillator (OPO)
- Second Harmonic Generation(SHG)