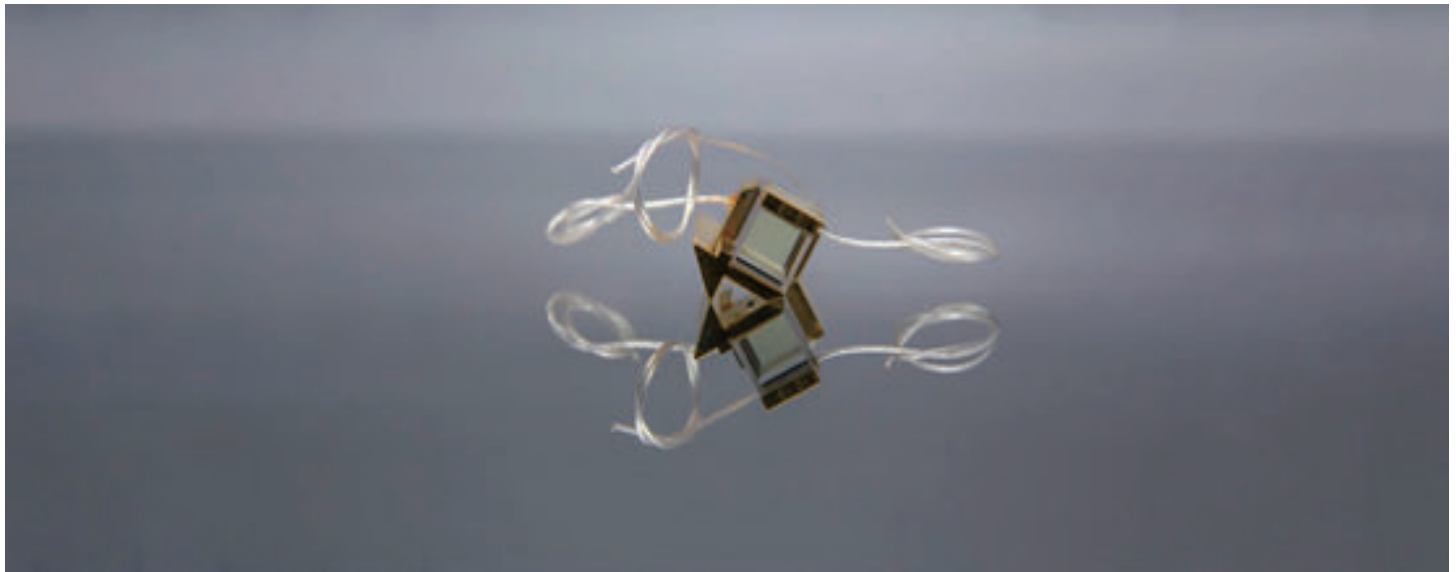


RTP



DESCRIPTION

Crylink's RTP crystals, also known as titanium titanium rubidium phosphate crystals, are a kind of electro-optical crystals with excellent synthesis. It has a wide range of applications in electro-optical applications with low switching voltage. With high damage threshold, low insertion loss, no piezoelectric effect, high extinction contrast and reliable homogeneity, it can be used in pulse selector, optical parametric oscillation, electro-optical Q-switching and laser power or phase modulation.

FEATURES

- High resistivity
- High extinction ratio
- No piezoelectric effect
- Wide range of transparency
- High damage threshold
- High temperature stability
- Low half-wave voltage
- Suitable for high frequency operation
- Stable mechanical and chemical properties

APPLICATIONS

- Pulse Selector
- Optical parametric oscillation
- Electro-optical Q-switches
- Laser power/phase modulation

CRYSTAL SPECIFICATIONS

| | |
|-----------------------------------|---|
| Scale Tolerance | ±0.1mm |
| Flatness | < $\lambda/8@633\text{nm}$ |
| Surface quality | 10/5 S/D |
| Parallelism | <30 arc sec |
| Perpendicularity | <30 arc min |
| Angular Tolerance | $\Delta\theta < 0.5^\circ$, $\Delta\phi < 0.5^\circ$ |
| Coating | Permeability enhancement film |
| Light Passing Aperture | >90% central area |
| Transmission wavefront distortion | < $\lambda/8@633\text{nm}$ |



RTP

PHYSICAL AND CHEMICAL PROPERTIES OF CRYSTALS

| | |
|---|--|
| Crystal Structure | Oblique Square |
| Lattice parameters | $a=12.96\text{\AA}, b=10.56\text{\AA}, c=6.49\text{\AA}$ |
| Density | 3.6g/cm^3 |
| Melting point | $\sim 1000^\circ\text{C}$ |
| Ferroelectric transition temperature | $\sim 810^\circ\text{C}$ |
| Mohs Hardness | ~ 5 |
| Coefficient of thermal expansion ($^\circ\text{C}$) | $a_1=1.01 \times 10^{-5}, a_2=1.37 \times 10^{-5}, a_3=-4.17 \times 10^{-6}$ |
| Moisture absorption | no |
| Dielectric constant | 13 |
| Color | Colorless |
| Ionic conductivity (room temperature, 10kHz) | 10^{-8} S/cm |

CRYSTAL OPTICAL PROPERTIES

| | |
|---------------------------------|---|
| Transparent range | 350-4500nm |
| Extinction ratio | $>20\text{dB}@633\text{nm}$ |
| Sellmeier's equation | $n_x^2=2.15559+0.93307[1-(0.20994/\lambda)^2]-0.01452\lambda^2$ $n_y^2=2.38494+0.73603[1-(0.23891/\lambda)^2]-0.01583\lambda^2$ $n_z^2=2.27723+1.11030[1-(0.23454/\lambda)^2]-0.01995\lambda^2$ |
| Electro-optical constants | $r_{33}=38.5\text{pm/V}$ Y-cut |
| | $r_{33}=35\text{pm/V}$ |
| | $r_{23}=12.5\text{pm/V}$ X-cut |
| | $r_{13}=10.6\text{pm/V}$ |
| 1064nm static half-wave voltage | 4x4x20mm: 1600V |
| | 6x6x20mm: 2400V |
| | 9x9x20mm: 3600V |

SPECTRA

