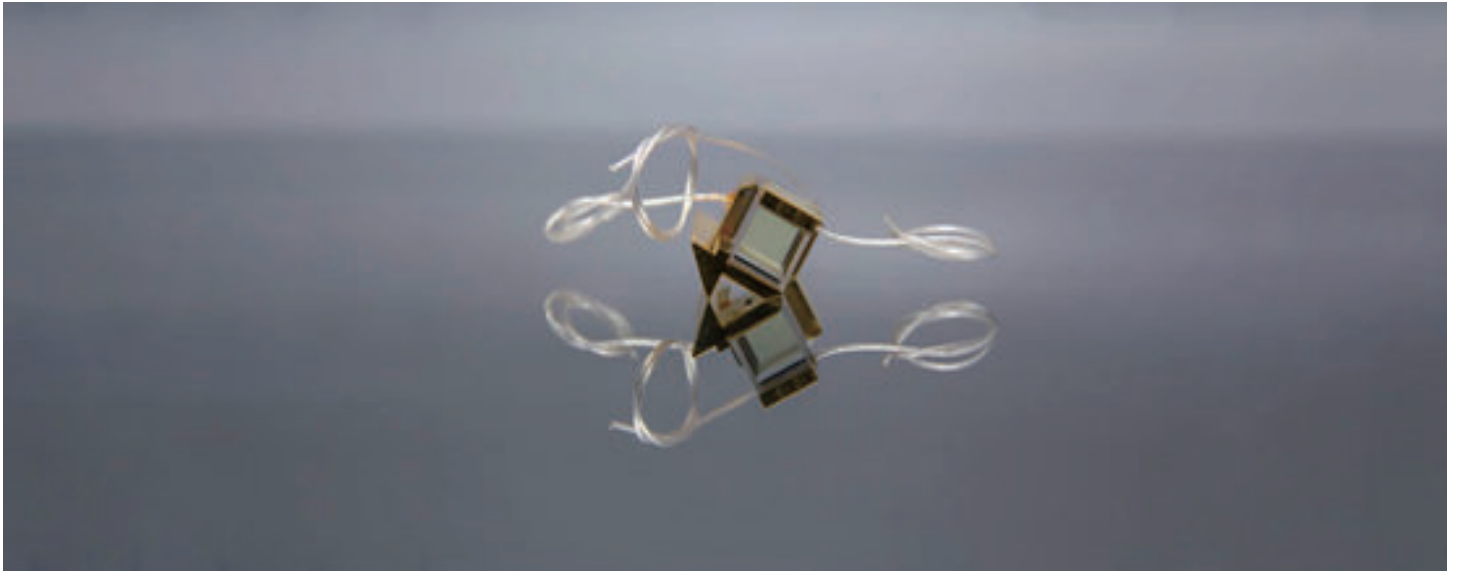


# RTP



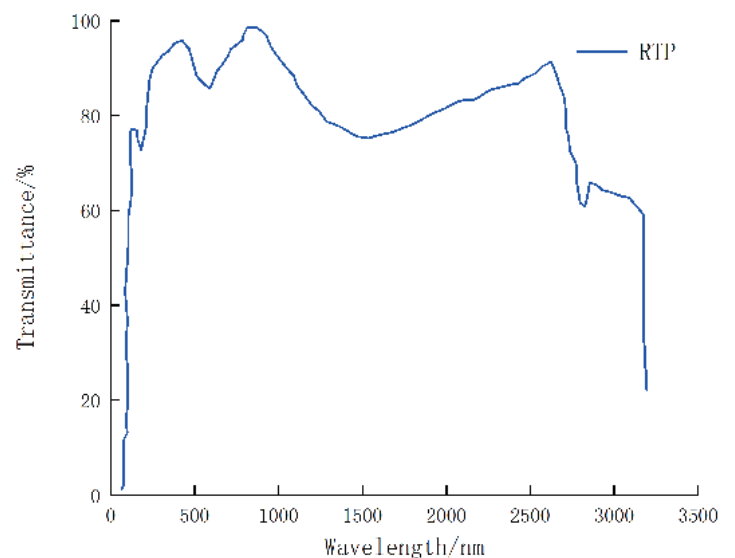
## DESCRIPTION

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

## SPECTRA



## APPLICATIONS

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



# 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	$3.6\text{g/cm}^3$
Melting point	$\sim 1000^\circ\text{C}$
Ferroelectric transition temperature	$\sim 810^\circ\text{C}$
Mohs Hardness	$\sim 5$
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)	$10^{-8}\text{ S/cm}$

## 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

## CRYSTAL SPECIFICATIONS

Scale Tolerance	$\pm 0.1\text{mm}$
Flatness	$< \lambda/8@633\text{nm}$
Surface quality	10/5 S/D
Parallelism	$<30\text{ arc sec}$
Perpendicularity	$<30\text{ arc min}$
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	$< \lambda/8@633\text{nm}$

