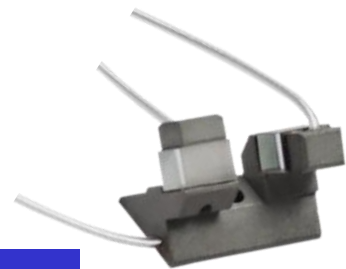


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RTP Modulator/Switch

Product Description

RTP (Rubidium Titanyl Phosphate - RbTiOPO4) is an electro-optical crystal with unique stable properties that are best suited for shortwave and high optical power applications in which other electro-optical crystals become unstable. Due to its small piezo effects, RTP is also well suited for high repetition rates and short pulse lengths. Our device contains a matching RTP pairs that advantageously compensates temperature induced birefringent drifts. We offer a wide range of aperture and driving voltage choice.



Features

- Large nonlinear coef.
- High repetition rate
- Low half-wave voltage
- No piezoelectric ringing
- High damage threshold
- High extinction ratio
- Non-hygroscopic

Performance Specifications

RTP Modulator/Switch	Spec
Transparency Range	350~4500nm
Dielectric Constant	E _{eff} = 13.0
Thermo-optical coefficients	dVdT = -0.029 nm / °C
Clear Aperture	> 90%
Coatings	AR@1064nm(R<0.2%)
Nonlinear Coefficients	d15/d31=2.0pm/V; d24/d32=3.6pm/V; d33=8.3pm/V
Electro-optic constants	Y-cut: r51=38.5 pm/V X-cut: r33=35 pm/V, r23=12.5 pm/V, r13=10.6 pm/V
Thermal Expansion Coefficients	α _x =1.01x10 ⁻⁵ , α _y =1.37x10 ⁻⁵ , α _z =-4.17x10 ⁻⁶
Static Half Wave Voltage (1064nm)	4x4x20 mm: 1,600 V 6x6x20 mm: 2,400 V
Electrical Resistivity	1011-1012 ohm-cm
Extinction Ratio	> 20dB
Optical Damage Threshold	> 600MW/ cm ² 10ns 10Hz at 1064nm
Wave front distortion	λ/6@633nm
Flatness	λ/10@633nm
Angle Tolerance	+/-0.15°
Perpendicularity	≤10'
Scratch/Dig	20/10
Parallelism	≤5"
Chamfer	≤0.2mmx45°

Applications

- Q-Switch
- Laser Power Modulation
- Laser Phase Modulation
- Pulse Picker

*Sellmeier equations of KD*P: (λ in um):

$$n_x^2 = 2.15559 + 0.93307[1 - (0.20994/\lambda)^2] - 0.01452\lambda^2$$

$$n_y^2 = 2.38494 + 0.73603[1 - (0.23891/\lambda)^2] - 0.01583\lambda^2$$

$$n_z^2 = 2.27723 + 1.11030[1 - (0.23454/\lambda)^2] - 0.01995\lambda^2$$

Revised on 12/13/22
(Click here for latest revision)

Ordering Information

Prefix	Type	Wavelength	Aperture	Length
RTPM-		350-430 nm = 0390 430-700 nm = 0550 700-1000 nm = 0850 1064 nm = 1064	2mm = 2 3mm = 3 4mm = 4 5mm = 5 6mm = 6 7mm = 7 8mm = 8	12mm = 1 14mm = 2 18mm = 3 20mm = 4 22mm = 5 25mm = 6

The crystal length relates to driving voltage. An example for 1060nm operation is listed below.

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.