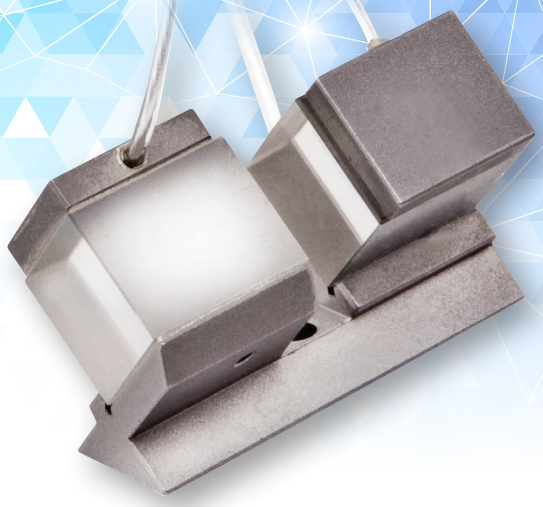
RAICOL



RTP EO Cells

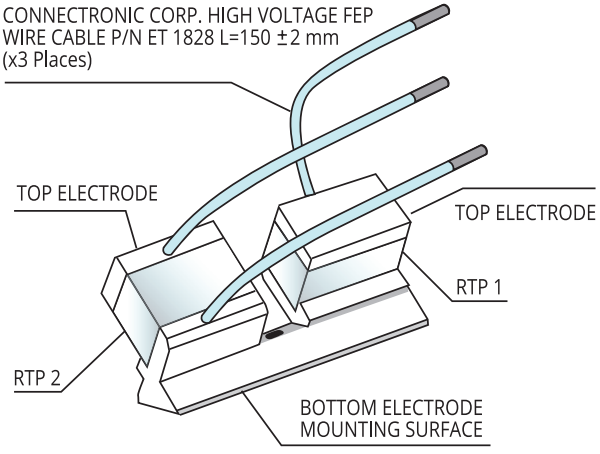
RTP (Rubidium Titanyl Phosphate) is a specialized member of the KTP crystal family, distinguished by its exceptional electro-optical properties and superior damage threshold. This unique combination makes RTP the optimal solution for demanding high-end laser applications.

RTP EO Cells feature an innovative thermally compensated design that employs two precisely matched crystals. These crystals are arranged in-line along the propagation axis (X or Y), with one crystal rotated 90 degrees relative to the other. This sophisticated configuration ensures optimal performance and stability.

Common Applications

- Q Switches | Pulse pickers
- Phase modulators | Amplitude modulators
- Cavity dumpers | Shutters
- Attenuators & Deflectors

RTP EO Cell Structure



Advantages

- Low half-wave voltage for EO Cells to enable a compact design
- Rise time, fall time, and pulse width < 1 ns which enables fast operation
- Designed to operate at a wide temperature stability range (-50° C to 70° C)
- High laser-induced damage threshold (over 1GW/cm^2, @1064 nm, 10 ns pulse, typical >2GW/cm^2)
- Minimal ringing, compatible for over 1 MHz repetition rate
- Non-hygroscopic, easy handling, no cover needed
- The best material in the spectral range of 500-3000 nm for electro-optics applications
- Very low absorption losses @1064 nm wavelength
- Extremely high homogeneity: up to 15x15 mm^2 EO cells as a standard size

RTP EO Cell Product Offerings

- Thermally compensated matched pair of RTP Elements
- Single RTP Element (used for phase modulators)
- Plug and play, Electro-optical cells assembly (with / without housing)

Typical Specifications for RTP EO Cells

Operational Range	500-3000 nm
Transmission @ 1064 nm	> 98.5%
Half Wave Voltage	3.6 kV (for EO Cell size: $9 \times 9 \times 10$ mm^2)
Extinction Ratio	> 35 dB
Clear Aperture	2×2 mm^2 to 15×15 mm^2
Crystal Length	Up to 50 mm
Acceptance Angle	< 4 deg.
Standard AR Coating @ 1064 nm	R < 0.2%
Laser Induced Damage Threshold	> 1 GW/cm^2, @ 1064 nm, 10 ns pulse or 10J/cm^2, typical > 2GW/cm^2

Raicol Crystals, founded in 1995, is a global leader in nonlinear and EO crystal growth, fabrication, and assembly. Raicol offers a unique set of benefits to its customers:

- 50 years of experience in crystal growth
- Global pioneers of RTP, HGTR KTP, and PPKTP crystal growth and assembly
- A one-stop-shop, from crystal growth through to coating and EO cell assembly
- Mass production and small R&D volume capabilities
- Fast delivery times
- Unmatched crystal quality