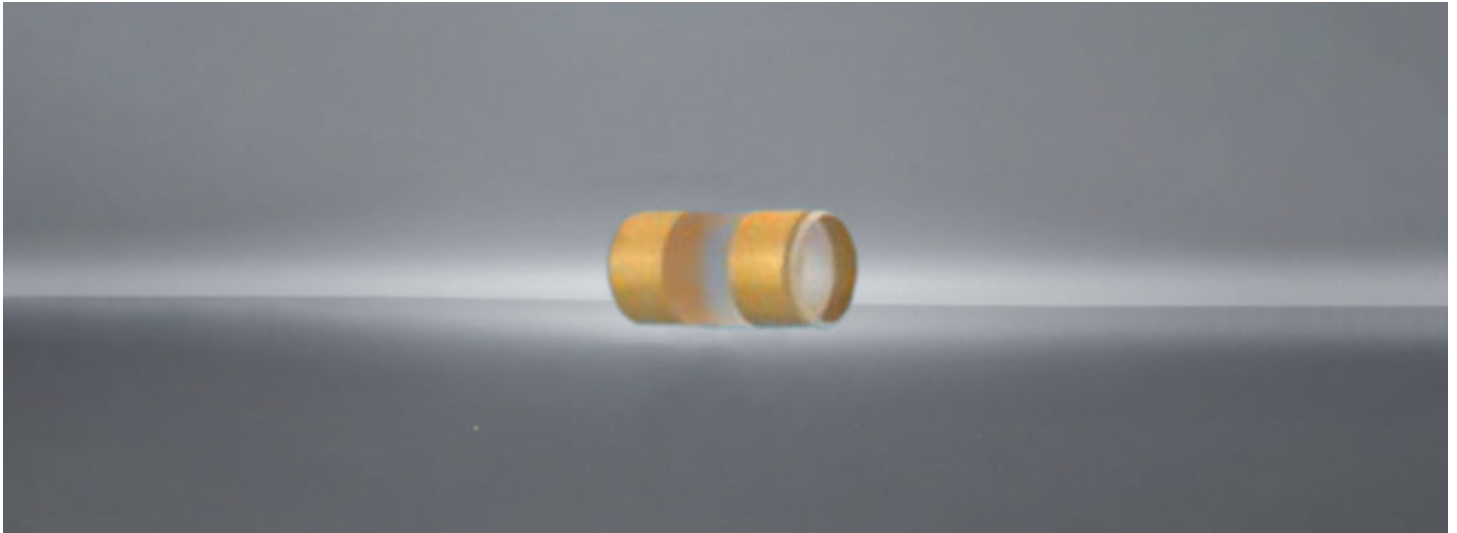


# KDP&KD\*P



## DESCRIPTION

KDP & DKDP(KD\*P) crystals, also known as potassium dihydrogen phosphate crystals and potassium deuterium phosphate crystals, with chemical formula  $\text{KH}_2\text{PO}_4$  and  $\text{KD}_2\text{PO}_4$ , are a comprehensive and relatively excellent electro-optical crystal product. KDP and DKDP (KD\*P) crystals have the advantages of high damage resistance threshold, superior electro-optical coefficient, good environmental tolerance, compact design, and easy adjustment, and can be used in the manufacture of low-cost and large-size finished nonlinear components for two-fold (SHG) and three-fold (THG) applications. KDP crystals are mainly used as piezoelectric crystals and electro-optical crystals to manufacture sonar, piezoelectric transducers, electro-optical modulators, optical switches, and other products. With the booming laser industry, the excellent nonlinear optical characteristics of KDP crystals have been valued, and they are used as frequency conversion crystals in the field of laser manufacturing, which can be used as the second, third, and fourth frequency multiplier of Nd: YAG (neodymium-doped yttrium aluminum garnet) lasers. In addition, KDP crystals can also be used in laser-induced fusion engineering. Given the excellent characteristics of DKDP, it is mainly used in two applications:

1. DKDP crystals are used as electro-optical crystals for making electro-optical modulators, etc.
2. DKDP crystals are used as non-linear crystals for making large diameter, high energy laser frequency multipliers.

## FEATURES

- Non-Static Birefringence
- No light refraction damage
- High resistance to photodamage threshold
- Excellent electro-optical coefficient
- Good tolerance to environment
- Compact design, easy adjustment

## APPLICATIONS

- Nd:YAG laser
- Nd:YLF Laser
- Q-Switch and Pockels Cells for Titanium Gem Laser
- Q-switch and Pockels Cells for emerald laser



# KDP&KD\*P

## CRYSTAL SPECIFICATION

Dimensional Tolerance	±0.1mm
Flatness	<λ/8 @633nm
Brightness	20/10
Parallelism	<20 arc seconds
Perpendicularity	<5 arc minutes
Angular Tolerance	±0.2°
Effective pore size	Central diameter >90%

## CRYSTAL CHARACTERISTICS

Crystal	KDP	KD*P
Molecular Formula	$\text{KH}_2\text{PO}_4$	$\text{KD}_2\text{PO}_4$
Through the wave	180-1550nm	200-2150nm
Nonlinear coefficient	$d_{36}=0.44\text{pm/V}$	$d_{36}=0.40\text{pm/V}$
Refractive index	$n_o=1.4938, n_e=1.4599$	$n_o=1.4948, n_e=1.4554$
Electro-optical coefficient	$r_{41}=8.8\text{pm/V}$	$r_{41}=8.8\text{pm/V}$
	$r_{63}=25\text{pm/V}$	$r_{63}=25\text{pm/V}$
Symmetry	42m	42m
Moisture absorption	High	High
Density (g/cm <sup>3</sup> )	2.332	2.355
Longitudinal half-wave voltage	$U_{\pi}=7.65\text{KV}(\lambda=546\text{nm})$	$U_{\pi}=2.98\text{KV}(\lambda=546\text{nm})$
Damage Threshold	>5GW/cm <sup>2</sup>	>3GW/cm <sup>2</sup>
Extinction ratio	30dB	30dB

## SPECTRA

