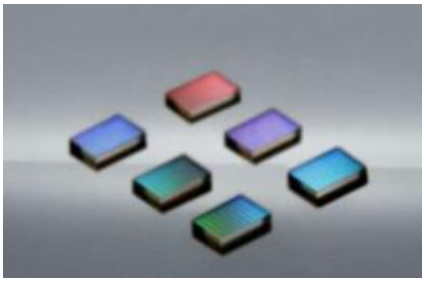
PPLN Periodic Polarized Lithium Niobate



Due to the fact that periodic polarization does not alter the optical properties of the crystal, PPLN possesses the characteristics of LiNbO3 and has a wide transmittance range (0.4-4.5 μ m).The maximum nonlinear coefficient d33=17.3 pm/V under quasi phase matching is achieved, which has the characteristics of high gain and low loss. It covers the near and mid infrared regions and has a long service life. It can be used for frequency doubling, differential frequency, sum frequency, optical parametric oscillation, and optical parametric amplification, etc. Therefore, it is widely used in optical parametric oscillators.

Temperature control must be conducted in use, and the OPO process using PPLN can obtain the light wavelength of 3~4.5 μ m, which can realize the conventional phase matching is difficult to achieve efficient output band, with wide application prospects.

Main features:
Long service life;
Wide light transmission range;
High nonlinear coefficient;
High damage resistance threshold;
Can be used to see the middle and far infrared band;
Can be used for a uniform / multi-cycle / fan-shaped QPM structure;
Hybrid configuration available for up conversion (SHG/SFG) and down conversion (DFG/OPA/OPG/OPO);

Product Parameter:

Standard requirements	
Length	5 ~ 60mm
Section	4X1 ~ 20X20mm2
Through the distortion	λ/4 @633nm
Parallel	<20"
Side vertical	< 5"
Finish	10 – 5 posterior membrane 20 – 10
Flatness	λ/8 @632.8nm
Extinction ratio	300:1 –500:1
Damage threshold	100MW/cm^{2}10ns 1064nm 10Hz (PPLN switch)
Refractive index	ne2=a1+b1f+ (a2+b2f)/{λ2- (a3+b3f)2} +(a4+b4f)/(λ2-a52) -a6λ2 f=(T-24.5)(T+570.82)