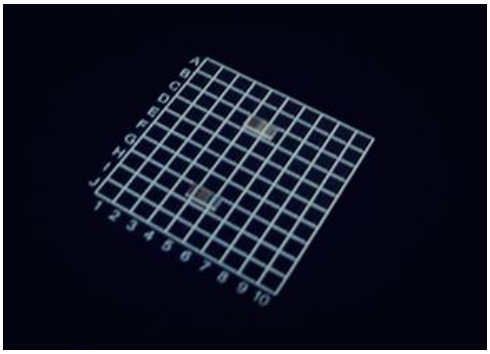
MgO:PPLN Crystal Chips for 561nm Laser Generation

- **High efficiency**
- **Small size fro compact DPSS lasers**

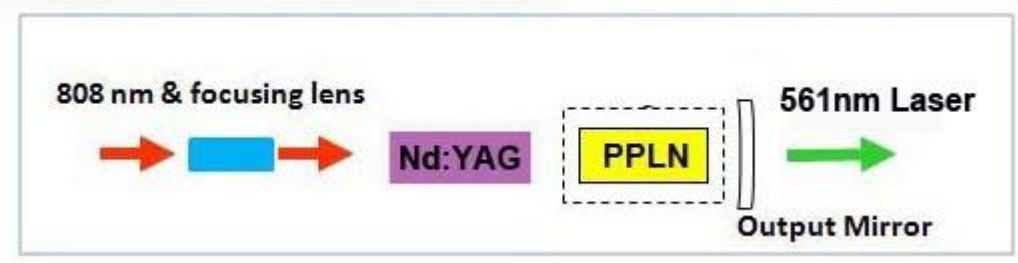
MgO doped periodically poled lithium niobate Crystals (or MgO:PPLN) is a highly efficient nonlinear frequency conversion crystal. It can be used as SHG, DFG, SFG, OPO and OPA components in lasers. Hangzhou Shalom EO offers the **MgO:PPLN crystal** of SHG of 1123nm laser which can generate 561nm laser, 561nm laser are widely used in the bio-detection applications. The crystals is small in size and easy to be assembled into your DPSS laser systems.



Application Notes

The 1.1% Nd doping Nd:YAG crystals is used as the laser generated crystals, Nd:YAG is pumped by 808nm laser diode and 1123nm laser is generated, the **MgO:PPLN crystals** is used as the frequency doubling components, which converts the 1123nm laser to 561nm lasers.

Application Configuration of the 561nm Laser Generated by MgO:PPLN Chips



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SPECIFICATIONS

Optical Specifications	
Length	2mm
Width	~2.1mm
Thickness	0.5mm
Coating on Input facet	AR@1123nm + HR @561nm
Coating on Output facet	AR@1123nm + AR@561nm (or customized)
Operation Temperature	30~35ºC

Note: The PPLN crystals with the Copper heat-sink packing is available.

Polishing Specifications	
Tolerance of Size	(Width±0.1mm) x (Thickness±0.05mm) X (Length±0.1mm)
Flatness	< Lambda/8 @ 633nm
Wavefront Distortion	< Lambda/6 @ 633nm
Chips	<0.1mm
Surface Quality	20/10 S/D
Parallelism	<10″
Perpendicularity	<10′

Basic Properties

Chemical and Physical Properties	
Melting Point	1255+/-5 ºC
Curie Point/Temperature	1140+/-5 ºC
Mohs Hardness	5
Density	4.648(5)g/cm3
Thermal conductivity	38W/m/K @ 25 ºC
Coefficient of thermal expansion	//a, 2.0x10-6/K //c, 2.2x10-6/K

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Optical and Nonlinear properties	
Wavelength range of Transmission	420nm ~ 5200nm
Nonlinear coefficient	d33 = 34.4 pm/V d31 = d15 = 5.95 pm/V d22 = 3.07 pm/V
Optical Damaging Threshold	0.3GW/cm2
Absorptive Coefficient	0.004/cm @ 1064nm

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