

ppSLT

Periodically Poled Stoichiometric Lithium Tantalate (LiTaO₃) ppSLT is an advanced quasi-phase-matched (QPM) nonlinear optical material that excels in frequency conversion applications. Periodically Poled Mg Doped Stoichiometric Lithium Tantalate (PPMgSLT) is an advanced quasi-phase-matched (QPM) nonlinear optical material engineered for high-power frequency conversion applications. PPMgSLT combines the excellent properties of magnesium-doped lithium tantalate (LiTaO₃) with sophisticated periodic poling techniques, enabling high power and high efficiency frequency conversion across an exceptionally broad wavelength range from UV to mid-IR wavelengths.

Advantages

- High photorefractive damage resistance
- Strong nonlinear coefficient (>7.5pm/V)
- Excellent thermal conductivity
- High-power capabilities (>10W green light generation)
- Broad transmission range

Common Applications

- THG, FHG, DFG, SFG, SHG, OPO

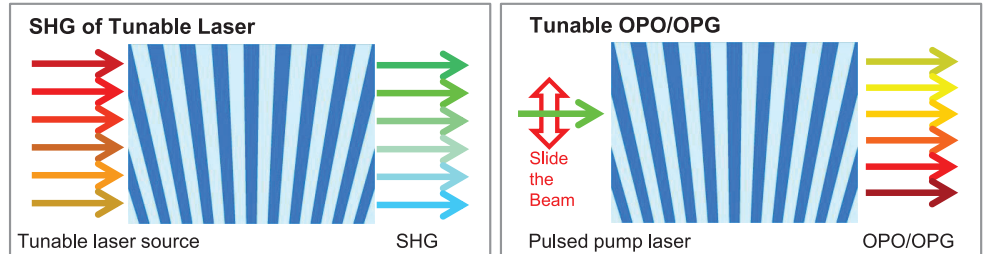
Typical Specifications for ppSLT

Transparency Range	300 nm -5,000 nm
Aperture	Typical 0.5 mm*2 mm
Length	Up to 40 mm
Flatness	$<\lambda/10$ @633 nm in CA
Perpendicularity	<10 arc min.
Laser Induced Damage Threshold (LIDT)	≥ 570 MW/cm ² @ 1064 nm, 10 ns, 10 Hz
Parallelism	<30 arc sec.
AR Coating	AR/AR, DBAR, dual band R < 0.5 %
Scratch/Dig	<10/5 in CA
Wavefront Distortion	$<\lambda/4$ @ 633 nm in CA
Absorption Coefficient	190 ppm/cm @ 1064 nm 1170 ppm/cm @ 532 nm

ppSLT offers a variety of innovative devices and designs:

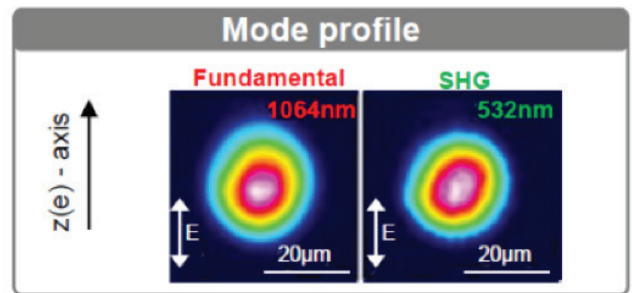
The Fan-out PPMgSLT variant offers additional capabilities

- Tunable Laser SHG
- Tunable OPO/OPG
- Watt Class Visible Generation
- Feasibility Test for New Wavelength



ppSLT waveguide: Femtosecond Laser-Written waveguide

- Order of magnitude increase in efficiency
- Watt class frequency conversion
- UV, visible -MIR range
- Circular output beam
- High power and High conversion efficiencies



Additional Capabilities

- Multi-grating structures for High power THG on single element
- Monolithic configurations

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