

1560→780nm Fiber-Coupled PPLN Waveguide Device



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LINIOBATE
Power Next Gen Photon

Description

Linibate produce periodically-poled lithium niobate (PPLN) in two forms: as a bulk crystal with a thickness of up to 1 mm, and as a waveguide device. PPLN devices are tailored for the production of tunable midwave-infrared (MWIR) radiation through pumping by commonly-available lasers with wavelengths near 1 micron.

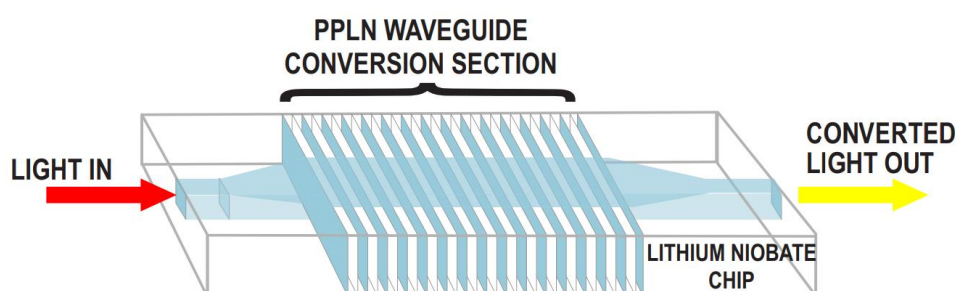
Features

Bulk PPLN devices can produce several Watts of average power between wavelengths of 2 and 4 microns. Waveguide frequency converters are fabricated using a process called Reverse Proton Exchange (RPE). The increased optical mode confinement in the resulting waveguide enables higher conversion efficiency devices that can be pumped with 100 mW class semiconductor lasers used for fiber-optic and free-space telecommunications.

Applications

Optical frequency conversion
Sum-frequency generation
Difference-frequency generation

Working Theory



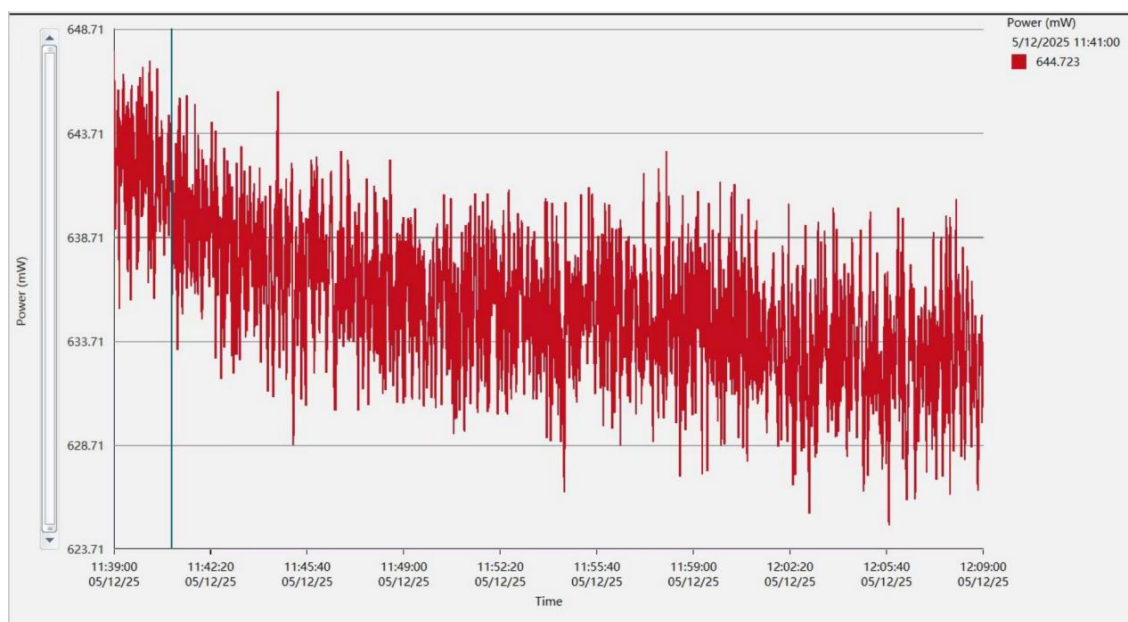
Standard Specifications

Item	SHG488	SHG532	SHG592	SHG775	SHG780
Input IR Wavelength	977nm	1064nm	1184nm	1550nm	1560nm
Input Maximum IR Power	< 2W		< 2W	< 5W	< 5W
Input Fiber Type /Operational Polarization Axis	PM980 / Slow			PM1550/ Slow	
SHG Wavelength	488.5nm	532nm	592nm	775nm	780nm
Back Reflection	> 35dB				
Polarization Extinction Ratio	> 20dB(PM Fiber output)				
Beam Waist Diameter (1/e ²)	1mm				
M2	< 1.1				

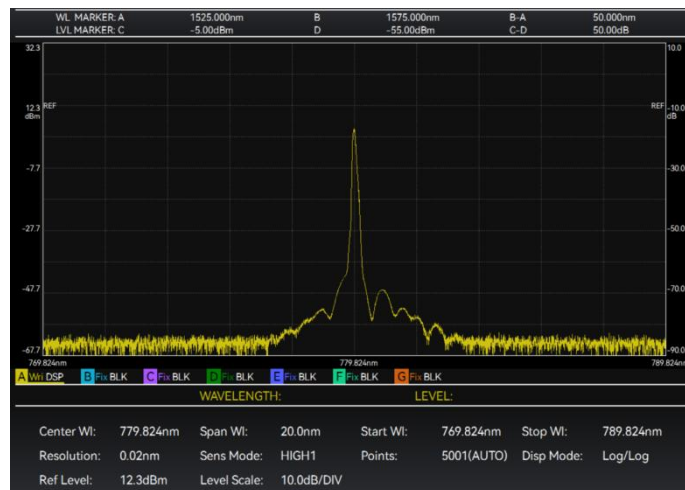
Item	SHG488	SHG532	SHG592	SHG775	SHG780
Beam Divergence Nominal	< 0.9mrad		< 1.15mrad		
Beam Waist Location From The Front Plate	0 to 1000mm				
Beam Ellipticity	< 10%				
Static Beam Position	< ±0.5mm				
Static Beam Angle	< ±5mrad				
Beam Pointing Stability（Stable Temperature）	< 10mrad				
Beam Pointing Stability（Temperature Changing）	< 10urad/degC				
Output Power Stability	< 1% over 8 hours				
Operational Ambient Temperature Range	10 to 40 degC				
Storage Temperature	—40 to 60 degC				

As for SHG532, Liniobate can supply you with not only PPLN—UNIT but also PPSLT—UNIT. For this case, you can input IR power up to 10W and you will get over 2W of SHG output power.

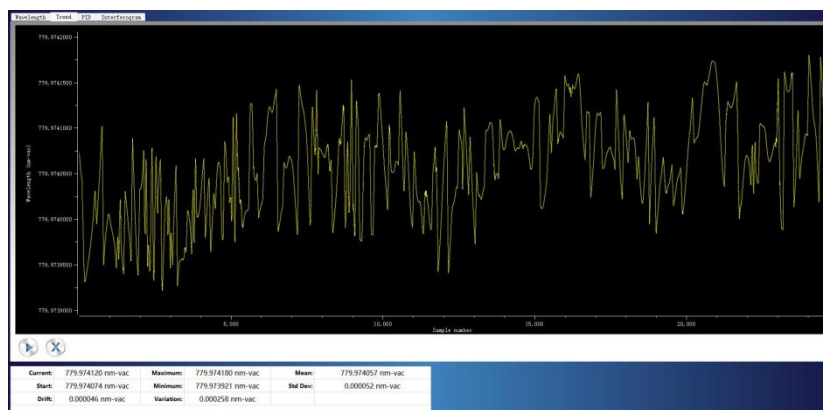
SHG780 Power Stability



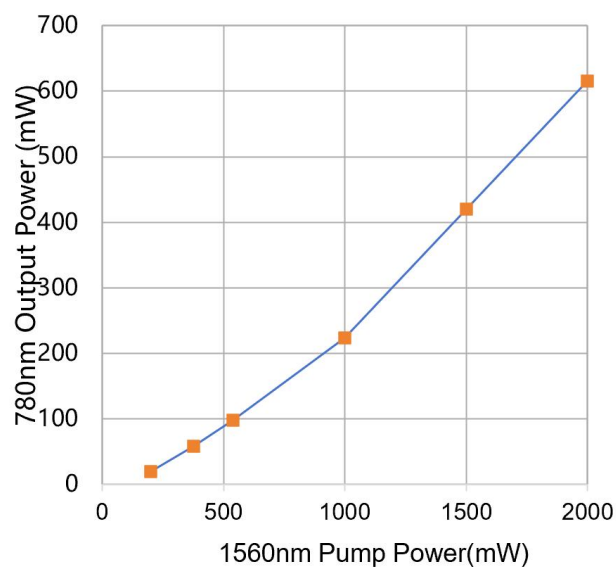
Spectrum and Tuning Range



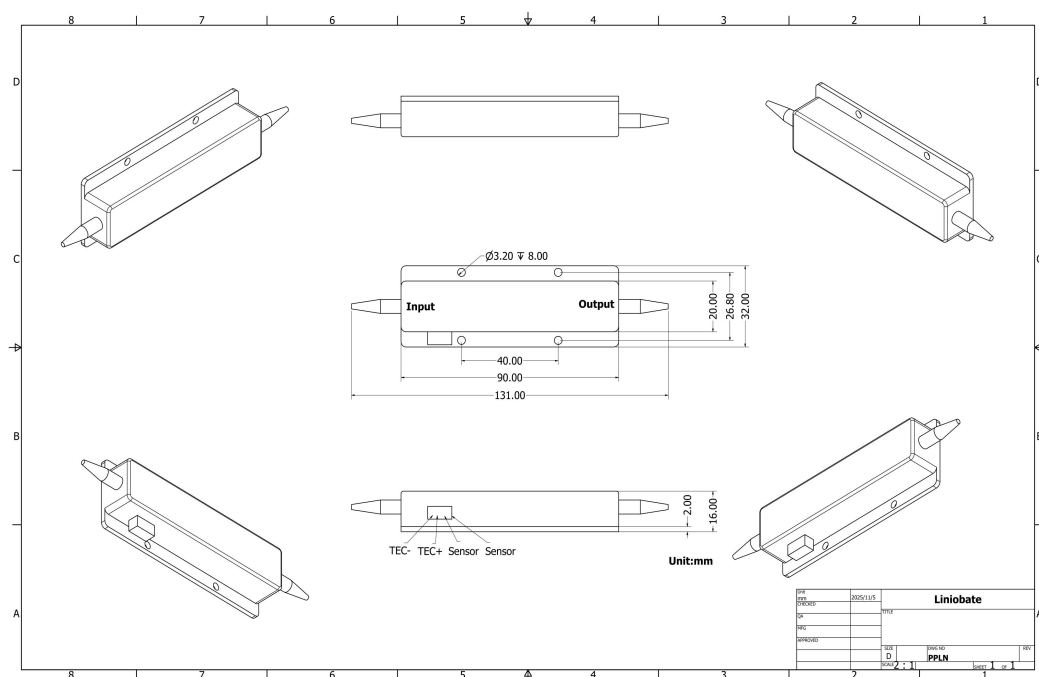
Frequency Stability



PPLN Pump and Signal Power Conversion curve



Dimensions and Pin definitions (Unit in mm)



Ordering info

PN#SHG780 1560→780nm Fiber-Coupled PPLN Waveguide Device

FC/APC Connector (Both ends), Input Fiber :PM 1550 fibers with Slow axis alignment,Output Fiber:PM780 fibers with Slow axis alignment, PER>20dB,Max Handling Power:5W,Output Power:>1000mW.