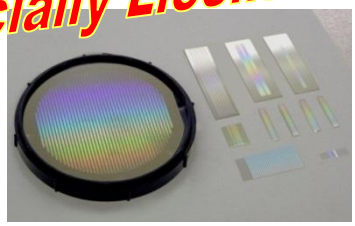
Fan-out PPMgSLT

Available for UV, Visible - MIR Range with High Conversion Efficiency

Let's try standard Fan-out PPMgSLT

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

Officially Licensed



PPMgSLT (QPM Device)
*QPM: Quasi Phase Matching

Licensed Patents on PPMgSLT
US6211999 / US6673330 / JP4569911

Prices

(JPY)

Standard Type	**200,000~** /pc
Additional AR-coating	**250,000~** /batch

Volume discount is available!

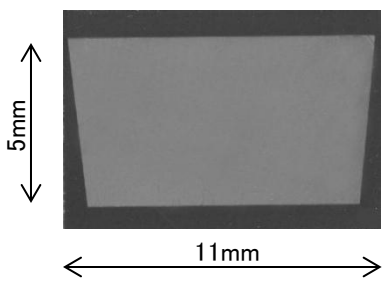
Application Example

SHG of Tunable Laser

Tunable OPO/OPG

Specification

Type/ ITEM	Thickness (mm)	Periodicity Λa (um)	Periodicity Λb (um)	Phase-matching condition @ around 50°C (SHG wavelength)
A	0.4	5.9	6.5	483～497
B		6.4	7.0	496～509
C		6.9	7.6	508～523
D	0.5	7.5	8.2	522～536
E		8.1	8.9	535～551
F		8.8	9.7	550～568
G		9.6	10.6	567～585
H		10.5	11.6	584～605
I		11.5	12.7	604～625
J	0.8	12.6	13.9	624～647
K		13.8	15.2	646～670
L		15.1	16.7	669～697
M		16.6	18.3	696～725
N		18.2	20.1	724～757
O		20.0	22.1	756～794



Thickness : 0.4～1mm

notes :
Conversion efficiency of fan-out structure is lower than that of single periodicity devices. It depends on the beam size.

P	1.0	22.0	24.3	793～835
Q		24.2	26.7	834～886
R		26.6	29.4	885～954
S		29.3	32.4	953～1055
T		32.3	35.7	1054～(1255)
U		35.6	39.3	

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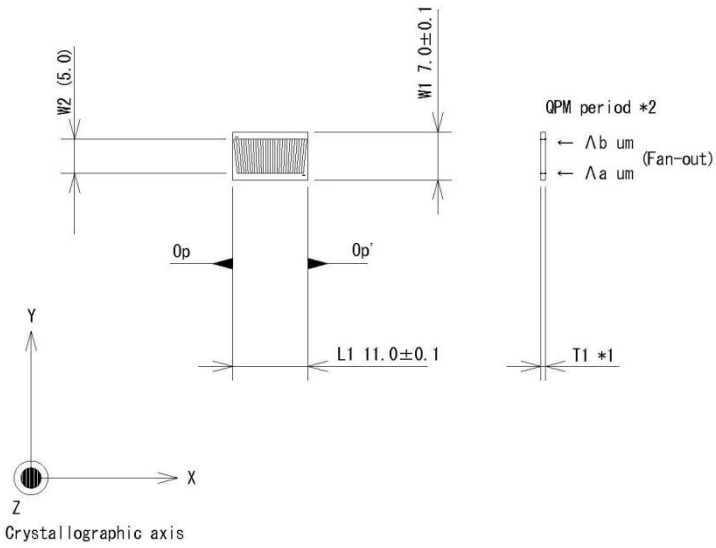
Contents are things of 1-Feb-2013.

Fan-out PPMgSLT (Common specification)

	Item	Specification	Inspection method	Sampling	
1.	**Material**				
1.1	Material	MgO: Stoichiometric LiTaO3	—	—	
2.	**Device**				
2.1	Length (L1)	11.0mm +/−0.1mm	Measuring microscope	All	
2.2	Width of device (W1)	7.0mm+/− 0.1 mm	Measuring microscope	Reference plates only	
2.3	Width of periodically poled area (W2)	5.0mm +/−0.1mm	-	—	Designed value
2.4	Thickness (T1)*1	0.4 +/−0.05mm 0.5 +/−0.05mm 0.8 +/−0.05mm 1.0 +/−0.05mm	height gauge	Reference plates only	Measuring wafer thickness by height gauge
2.5	Flatness [Op] plane	<=λ/10 @ 633nm	Optical interferometer	All	Optical polish
2.6	Flatness [Op'] plane	<=λ/10 @ 633nm	Optical interferometer	All	Optical polish
2.7	Parallelism	<= 5 arc minutes	Autocollimator	All	
2.8	Effective aperture (under periodically poled area: (W2 X T1))	>80%	Microscope	All	
3.	**Phase matching condition**				
3.1	QPM period*2	Λa um ～ Λb um (Fan-out)	—	—	Designed values

Schematics of the device



List of specifications

Type/ ITEM	Thickness T1 *1 (mm)	Periodicity *2		Phase-matching condition @ around 50°C (SHG wavelength)
		Λ a (um)	Λ b (um)	
A	0.4	5.9	6.5	483～497
B		6.4	7.0	496～509
C		6.9	7.6	508～523
D	0.5	7.5	8.2	522～536
E		8.1	8.9	535～551
F		8.8	9.7	550～568
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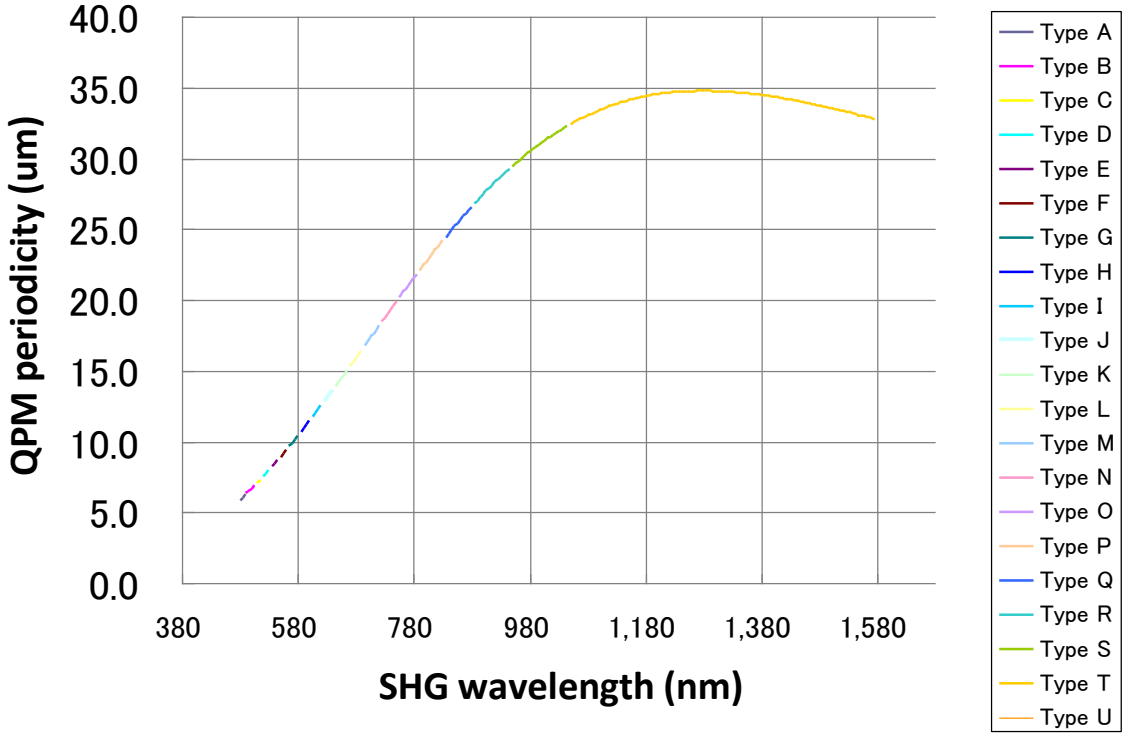
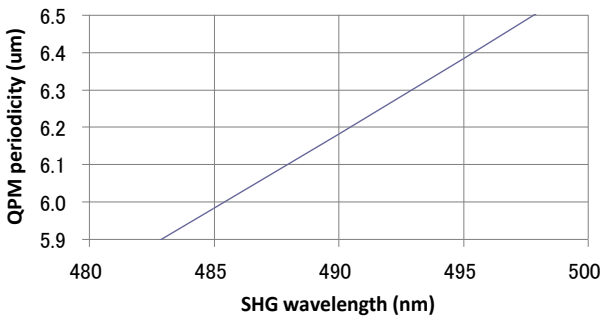
Fan-out PPMgSLT: Type A, B (Phase matching condition)

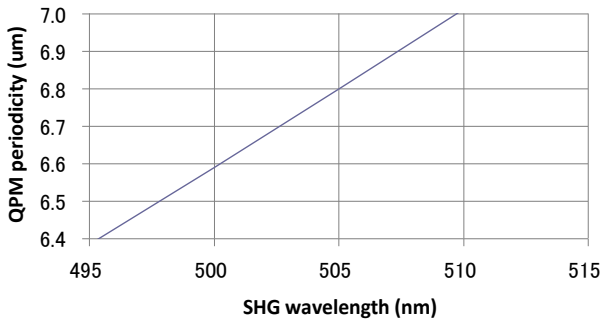
EXAMPLE of calculation
(Phase matching at around 50℃)



Type A



Type B



Note:

1. Above calculation are based on the following reference paper.
   A. Bruner et al., Opt. Lett. Vol. 28, p. 194 (2003).
2. Phase matching temperature would be different around ±20℃ at visible light region and more at middle infrared region. That is because of the slight differences of refractive index between reference paper and real material. Please ask us detail information.

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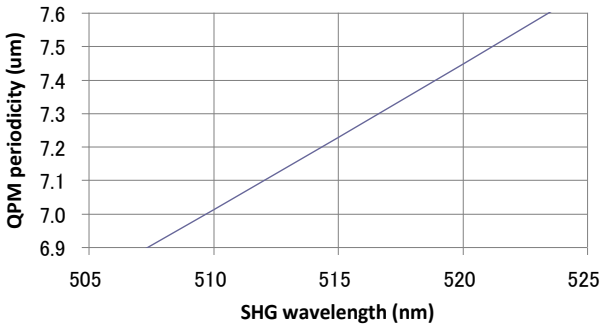
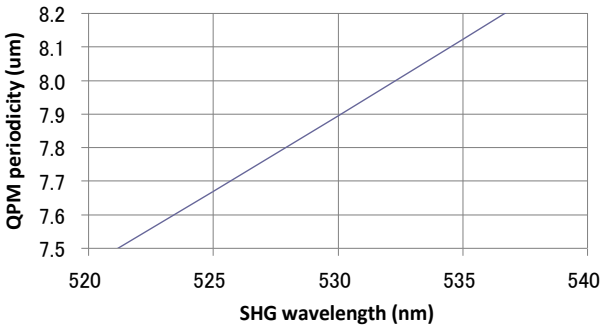
Fan-out PPMgSLT: Type C-H (Phase matching condition)

EXAMPLE of calculation
(Phase matching at around 50℃)

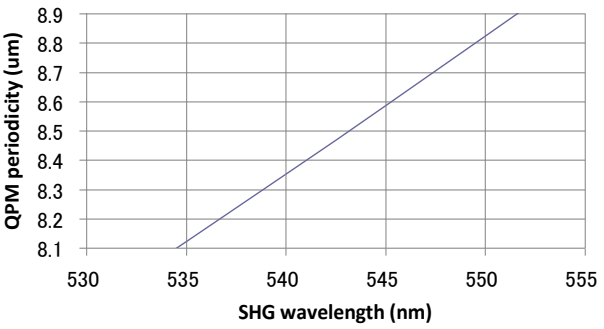
Type C



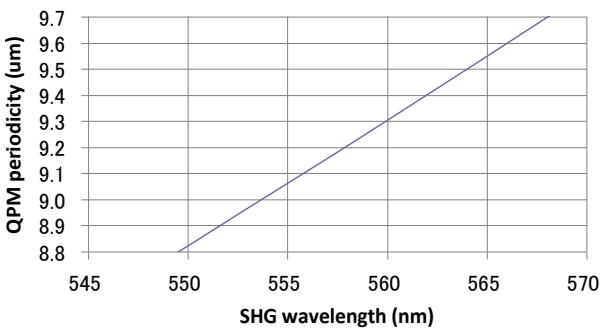
Type D



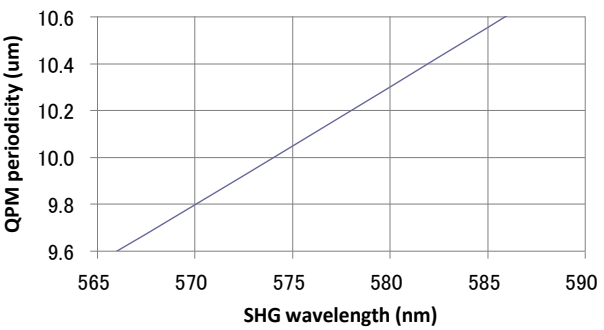
Type E



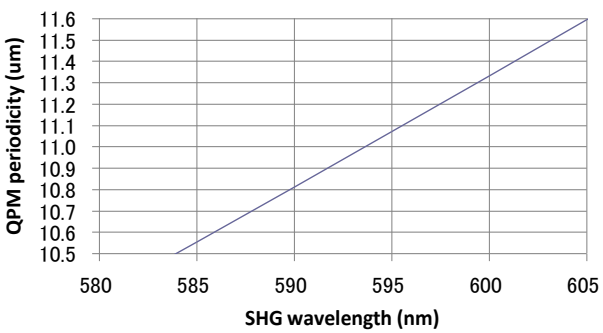
Type F



Type G



Type H



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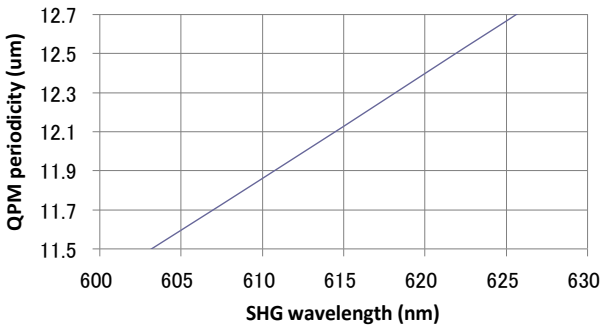
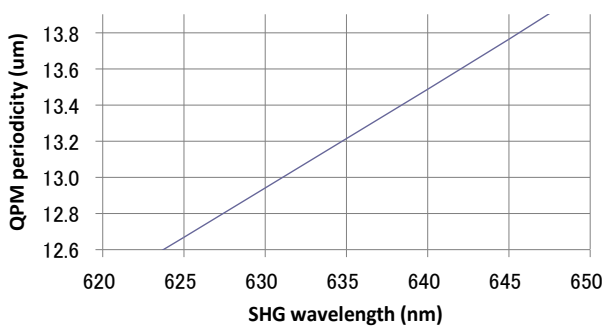
Fan-out PPMgSLT: Type I-N (Phase matching condition)

EXAMPLE of calculation
(Phase matching at around 50℃)

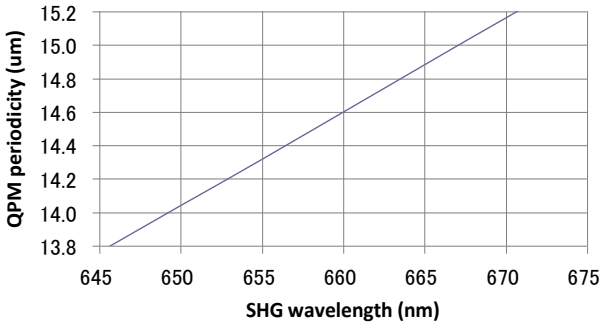
Type I



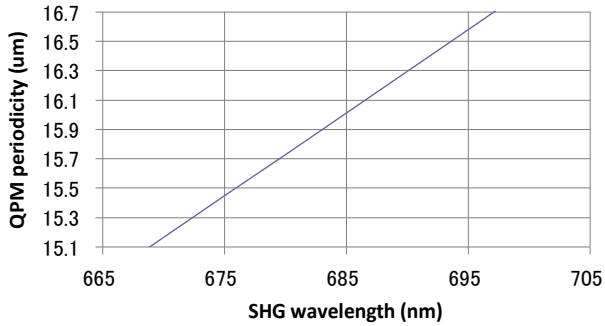
Type J



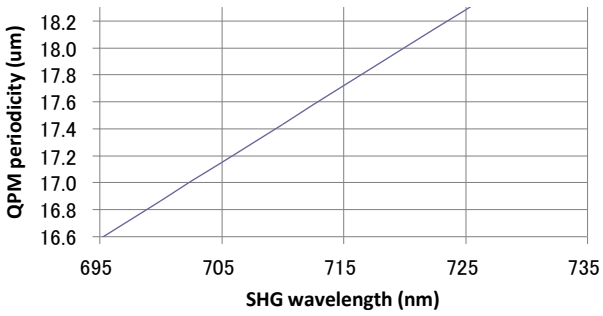
Type K



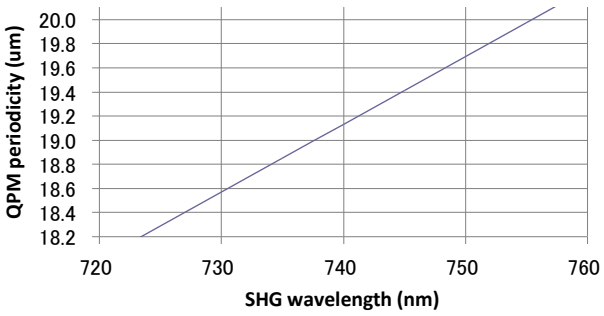
Type L



Type M



Type N



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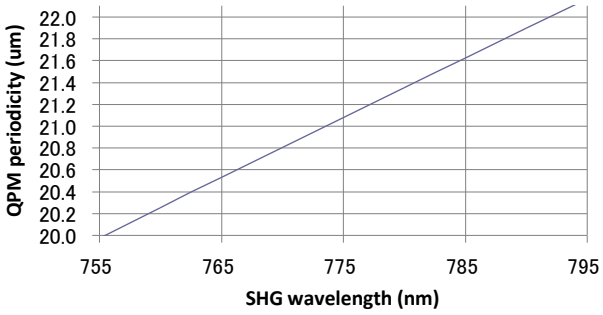
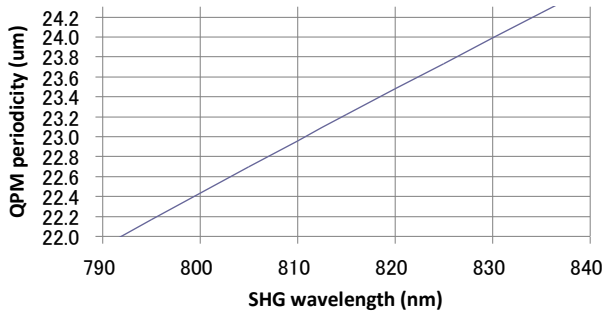
Fan-out PPMgSLT: Type O-T (Phase matching condition)

EXAMPLE of calculation
(Phase matching at around 50℃)

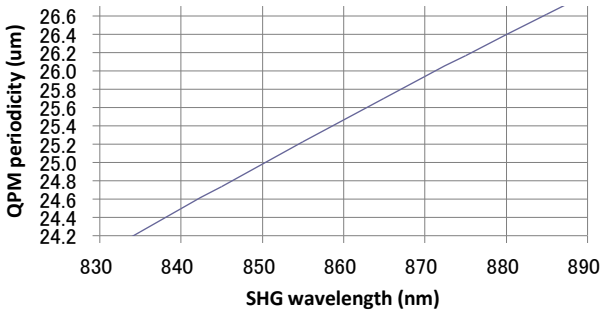
Type O



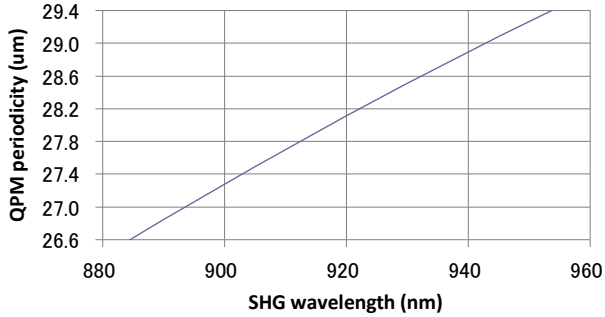
Type P



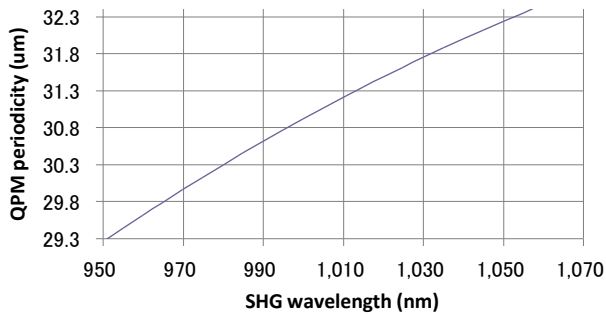
Type Q



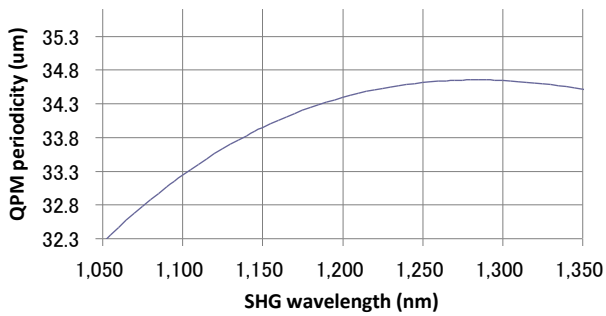
Type R



Type S



Type T



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