

GWU-Lasertechnik

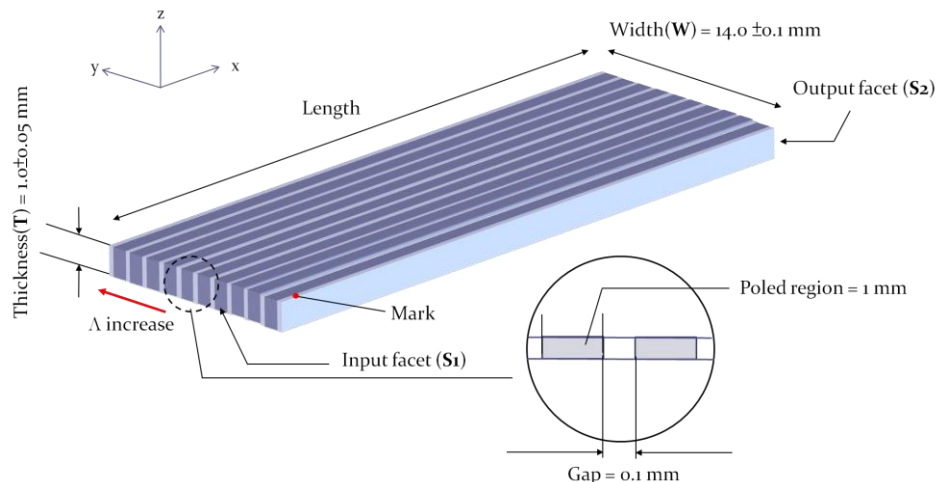


HCP
HC PHOTONICS CORP.

PPLN CHIPS

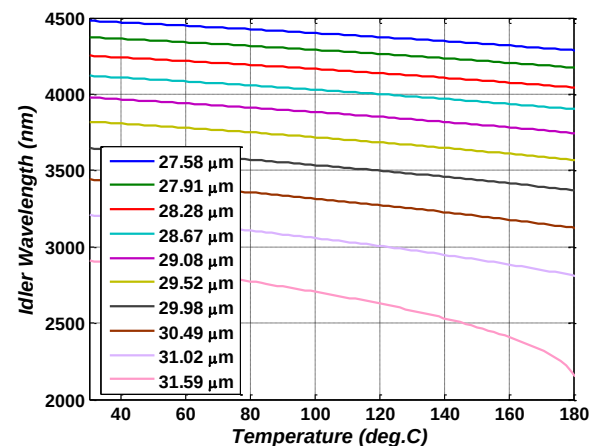
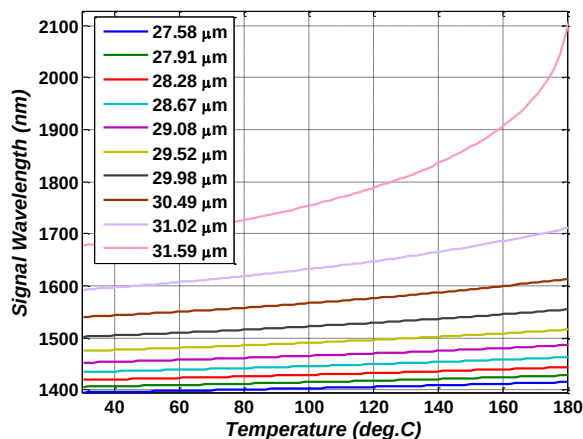
Product Specifications & Selection Guide

- Chip Lay-Out



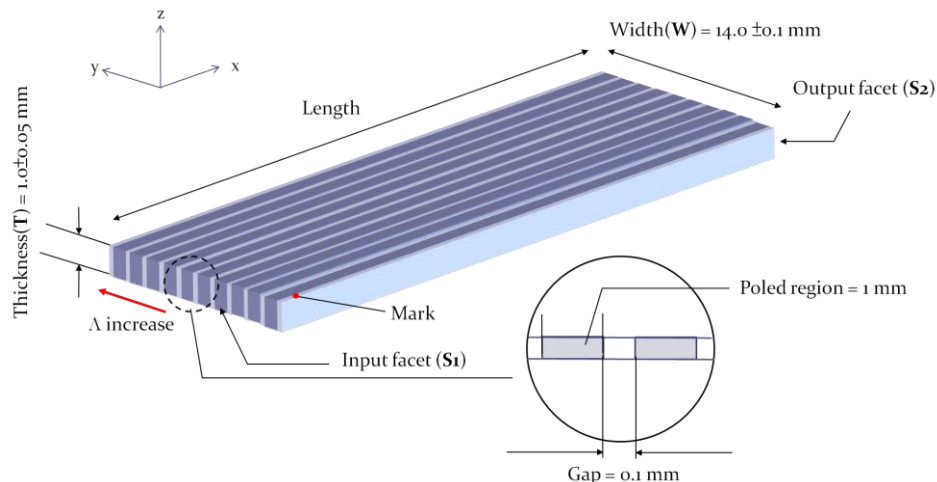
[Image for reference only. Not for scale.]

- Phase Matching Tuning Curve



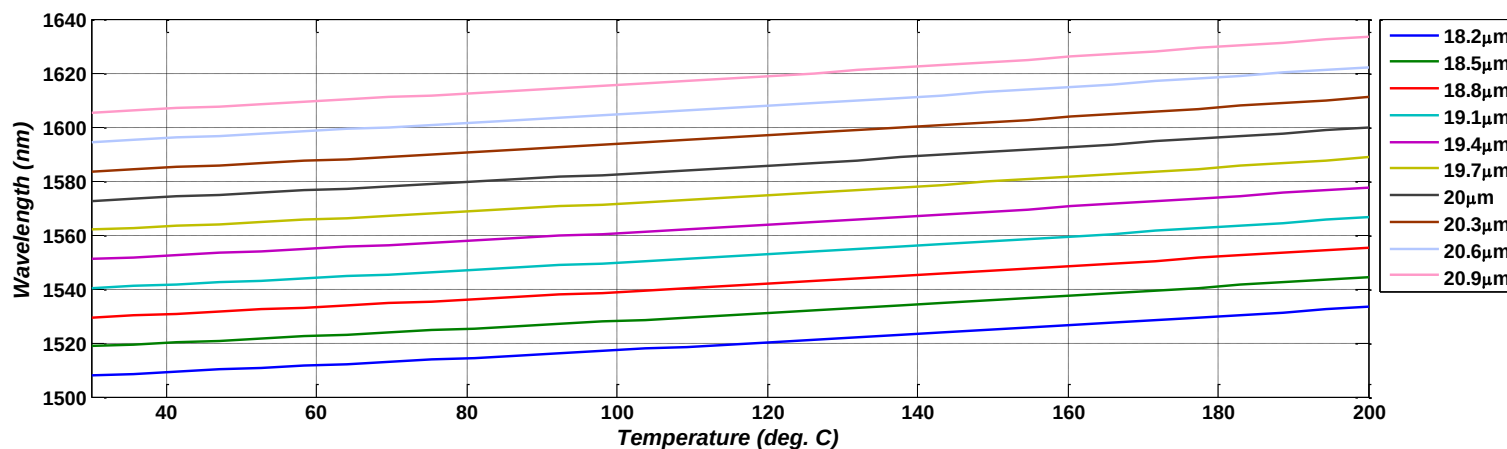
Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	27.58, 27.91, 28.28, 28.67, 29.08, 29.52, 29.98, 30.49, 31.02, 31.59	Microscope
Main Function	Optical Parametric Oscillator	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S1/S2 facets)	S1/S2 @1064 (R<0.5%) /1380~1800 (R<0.5%) /1800~4500 (R<5%) nm	Spectral Analyzer
Aperture Size	14.0 x 1.0 mm ² (W x T)	Cutting Machine
Available Length	0.3/0.5/1.0 $\pm$ 0.1 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Chip Lay-Out



[Image for reference only. Not for scale.]

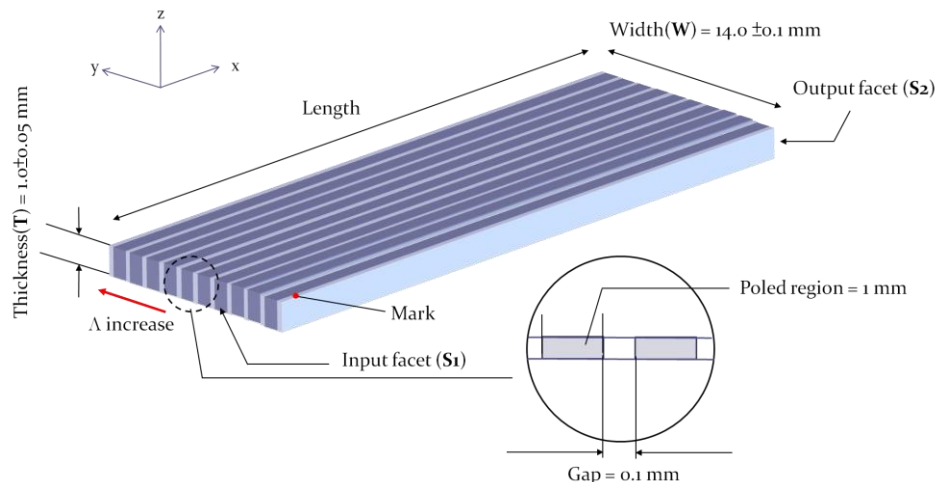
- Phase Matching Tuning Curve



Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μ m)	18.2, 18.5, 18.8, 19.1, 19.4, 19.7, 20.0, 20.3, 20.6, 20.9	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S_1/S_2 facets)	750-810(R<0.5%) /1500-1620(R<0.3%) nm	Spectral Analyzer
Aperture Size	14.0 x 1.0 mm ² (W x T)	Cutting Machine
Available Length* ¹	0.3/0.5/1.0 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

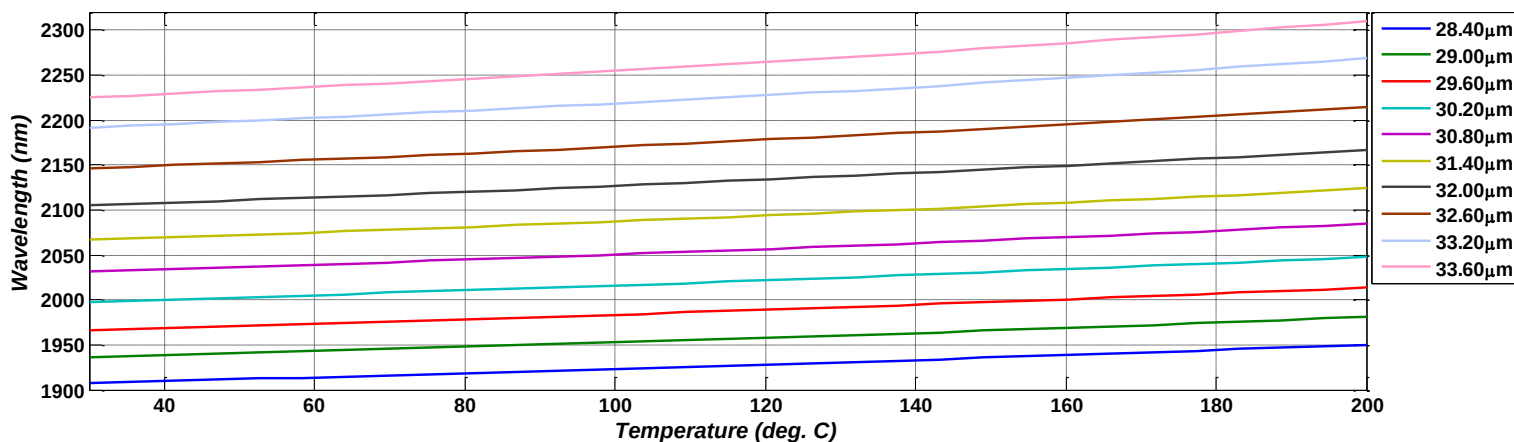
*¹ Refer to length of periodically poled. Physical length is 1.0 ± 0.1 mm.

- Chip Lay-Out



[Image for reference only. Not for scale.]

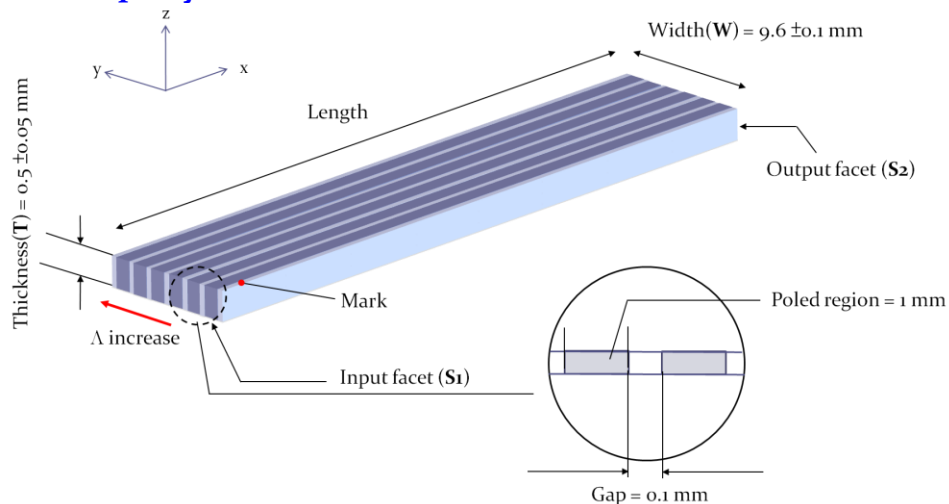
- Phase Matching Tuning Curve



Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μ m)	28.40, 29.00, 29.60, 30.20, 30.80, 31.40, 32.00, 32.60, 33.20, 33.60	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S_1/S_2 facets)	750-810(R<0.5%) /1500-1620(R<0.3%) nm	Spectral Analyzer
Aperture Size	14.0 x 1.0 mm ² (W x T)	Cutting Machine
Available Length* ¹	0.3/0.5/1.0 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

*¹ Refer to length of periodically poled. Physical length is 1.0 ± 0.1 mm.

- Chip Lay-Out

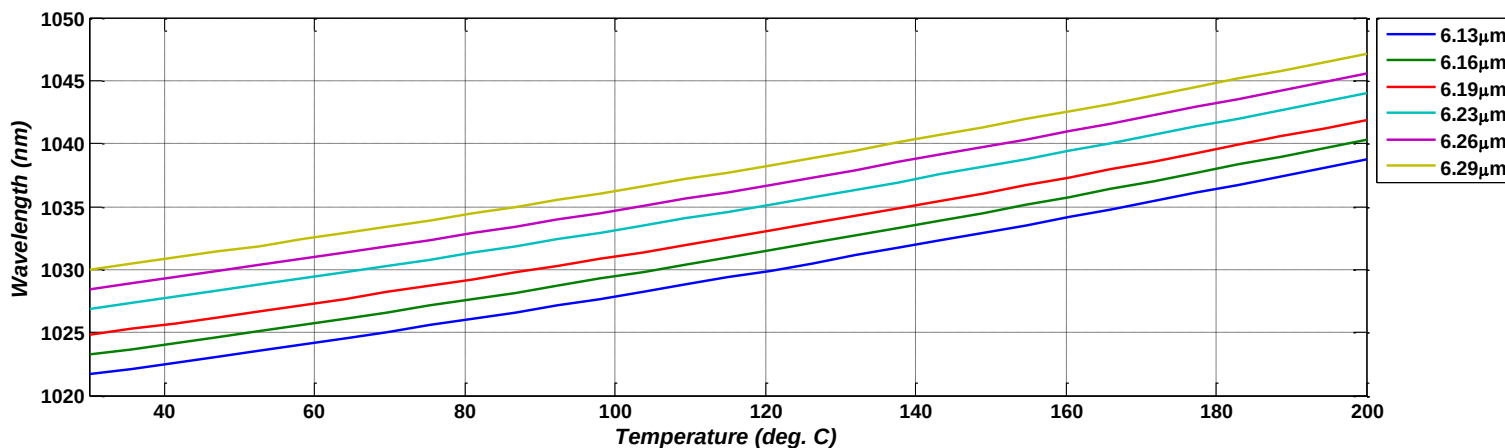


[Image for reference only. Not for scale.]

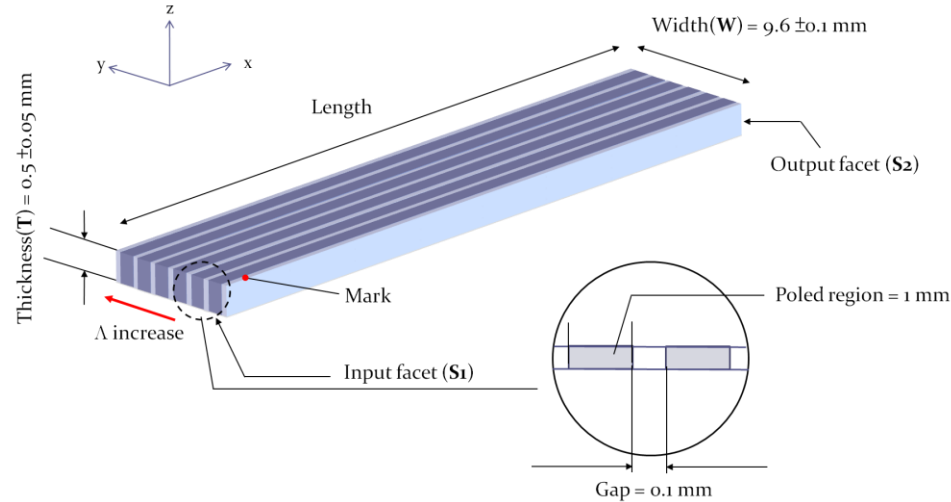
Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	6.13, 6.16, 6.19, 6.23, 6.26, 6.29	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S ₁ /S ₂ facets)	S ₁ /S ₂ @485~590(R<0.5%) /970~1180(R<0.5%) nm	Spectral Analyzer
Aperture Size	9.6 x 0.5 mm ² (W x T)	Cutting Machine
Available Length	0.3/0.5/1.0 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

*1 Refer to the length of poled grating. Physical length is 1.0 ± 0.1 mm.

- Phase Matching Tuning Curve



- Chip Lay-Out

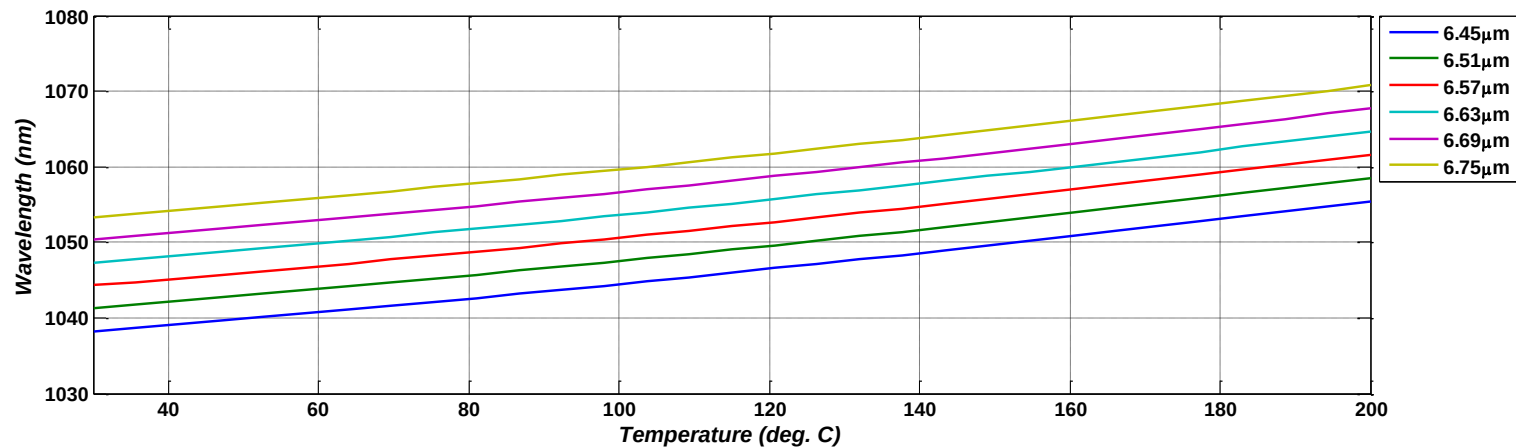


[Image for reference only. Not for scale.]

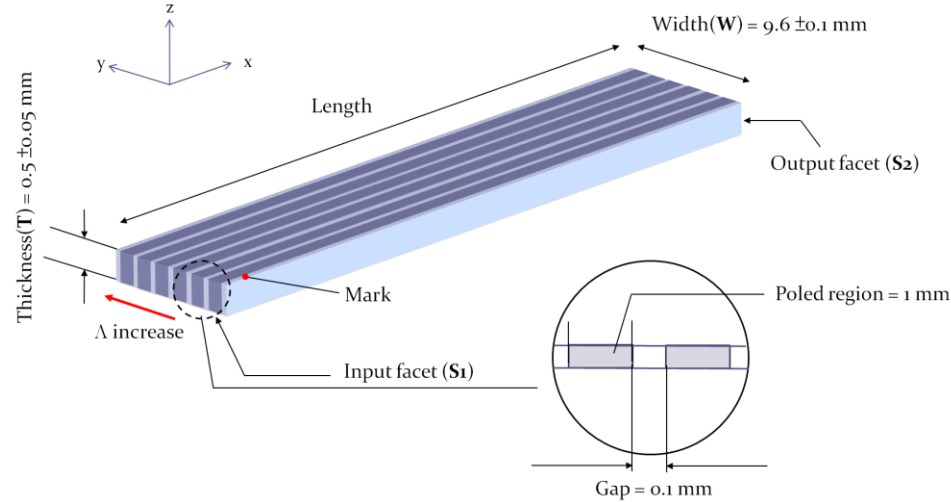
Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	6.45, 6.51, 6.57, 6.63, 6.69, 6.75	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S1/S2 facets)	S1/S2 @485~590(R<0.5%) /970~1180(R<0.5%) nm	Spectral Analyzer
Aperture Size	9.6×0.5 mm ² (W x T)	Cutting Machine
Available Length	0.3/0.5/1.0 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

*1 Refer to the length of poled grating. Physical length is 1.0 ± 0.1 mm.

- Phase Matching Tuning Curve



- Chip Lay-Out

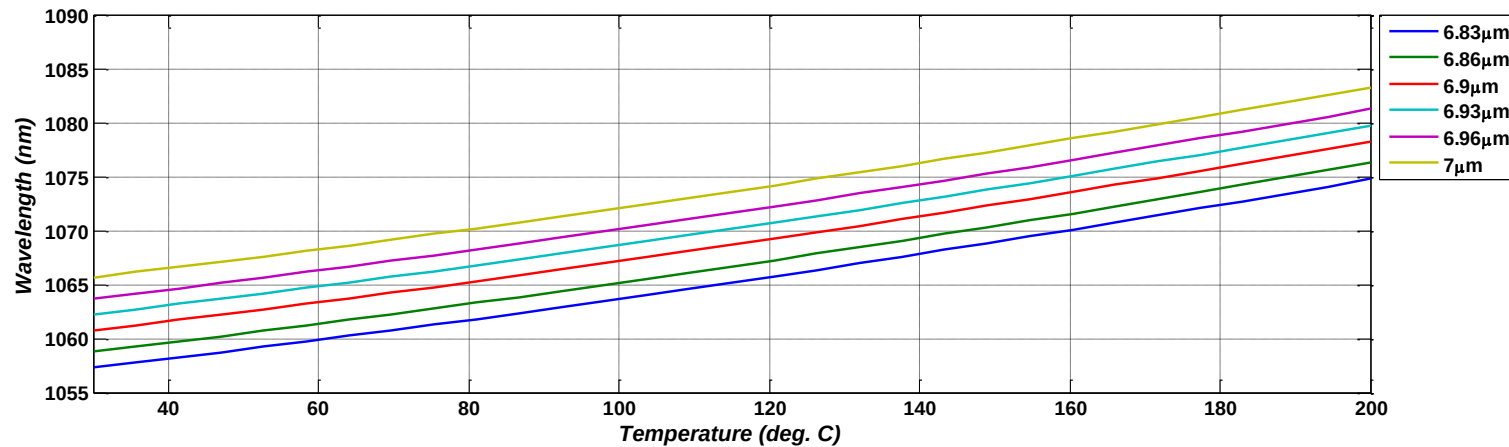


[Image for reference only. Not for scale.]

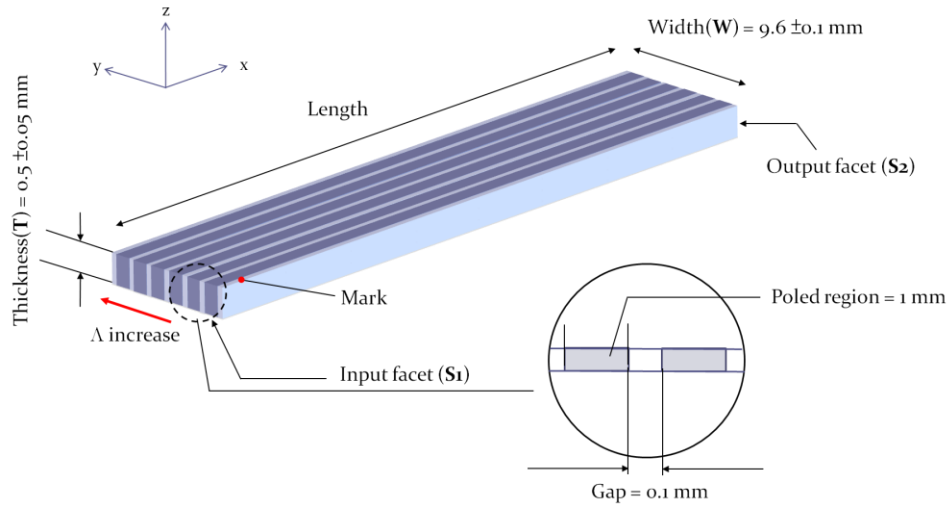
Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μ m)	6.83, 6.86, 6.90, 6.93, 6.96, 7.00	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633$ nm)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S ₁ /S ₂ facets)	S ₁ /S ₂ @485~590(R<0.5%) /970~1180(R<0.5%) nm	Spectral Analyzer
Aperture Size	9.6×0.5 mm ² (W x T)	Cutting Machine
Available Length	$0.3 / 0.5 / 1.0$ mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

*1 Refer to the length of poled grating. Physical length is 1.0 ± 0.1 mm.

- Phase Matching Tuning Curve



- Chip Lay-Out

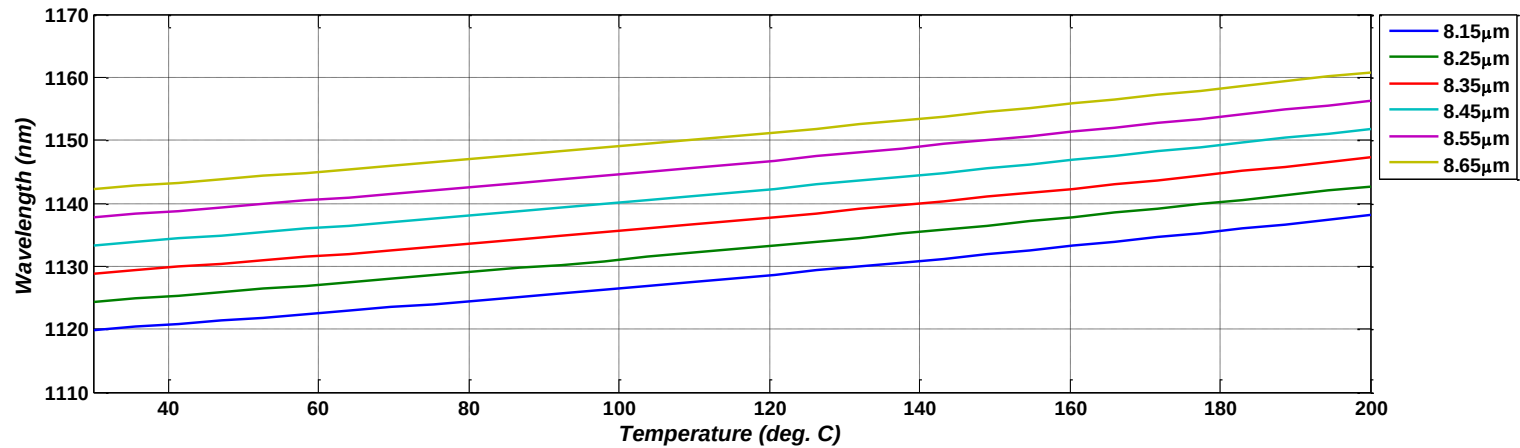


[Image for reference only. Not for scale.]

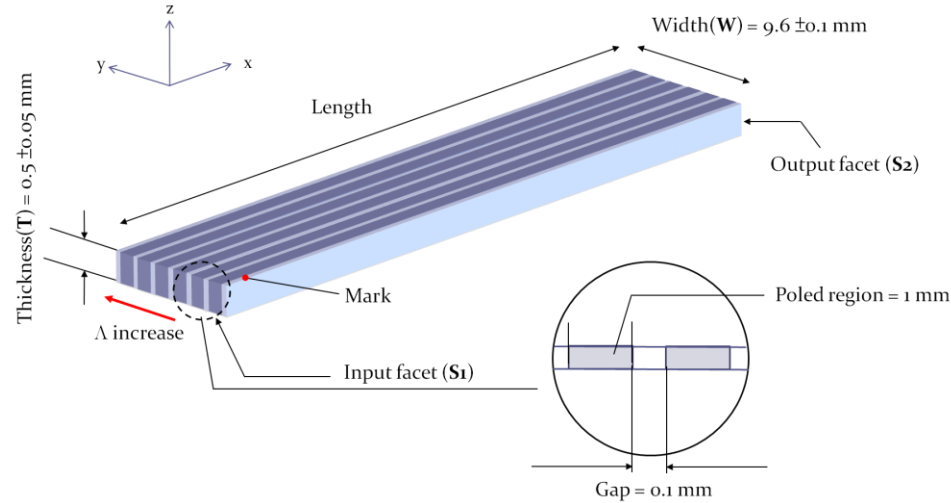
Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μ m)	8.15, 8.25, 8.35, 8.45, 8.55, 8.65	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633$ nm)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S ₁ /S ₂ facets)	S ₁ /S ₂ @485~590(R<0.5%) /970~1180(R<0.5%) nm	Spectral Analyzer
Aperture Size	9.6×0.5 mm ² (W x T)	Cutting Machine
Available Length	$0.3 / 0.5 / 1.0$ mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

*1 Refer to the length of poled grating. Physical length is 1.0 ± 0.1 mm.

- Phase Matching Tuning Curve



- Chip Lay-Out

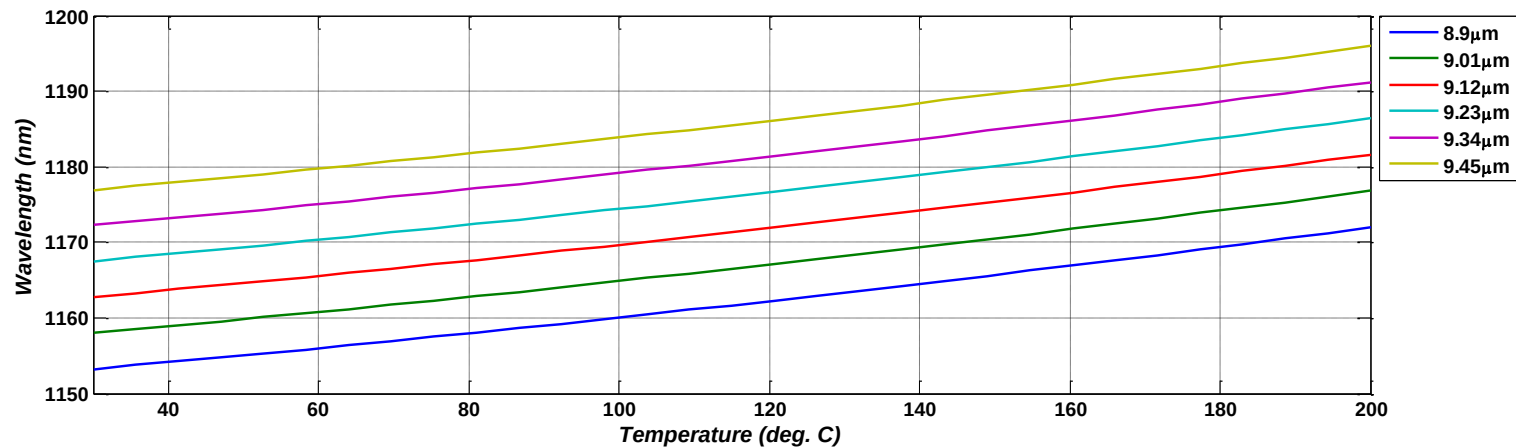


[Image for reference only. Not for scale.]

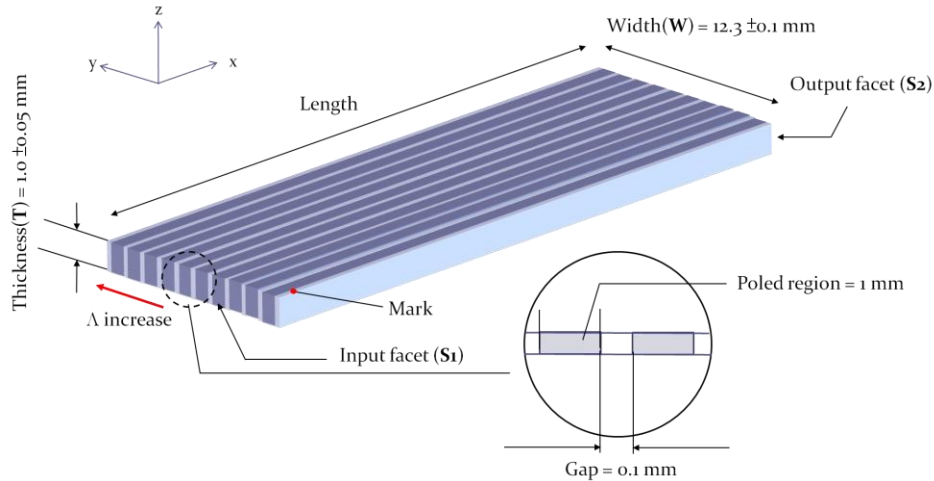
Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	8.90, 9.01, 9.12, 9.23, 9.34, 9.45	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S1/S2 facets)	S1/S2 @485~590(R<0.5%) /970~1180(R<0.5%) nm	Spectral Analyzer
Aperture Size	9.6×0.5 mm ² (W x T)	Cutting Machine
Available Length	0.3/0.5/1.0 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

*1 Refer to the length of poled grating. Physical length is 1.0 ± 0.1 mm.

- Phase Matching Tuning Curve

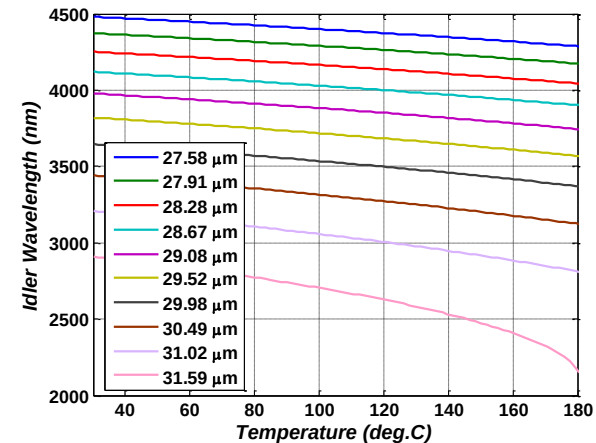
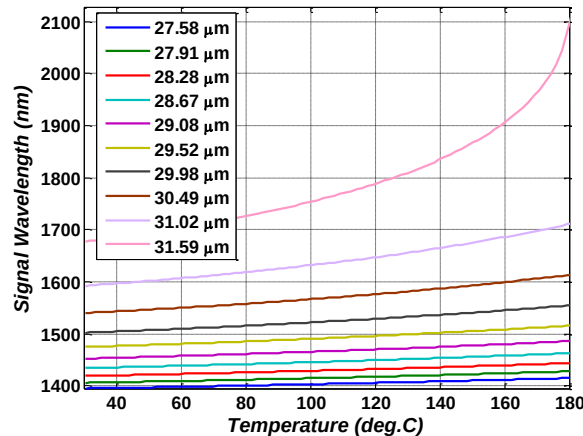


- Chip Lay-Out



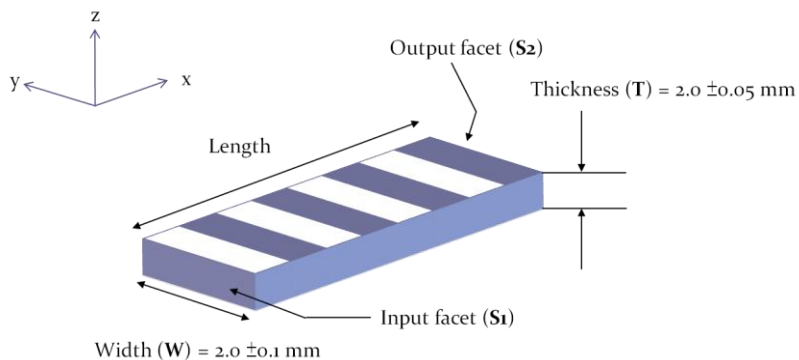
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- Phase Matching Tuning Curve



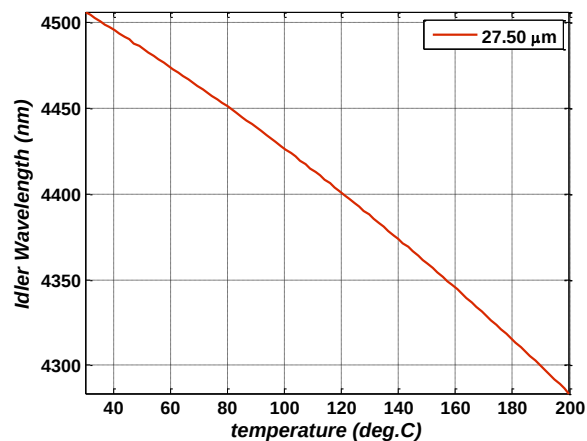
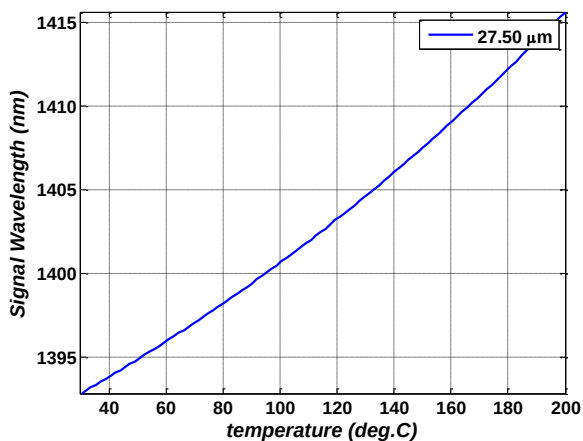
Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μ m)	27.58, 27.91, 28.28, 28.67, 29.08, 29.52, 29.98, 30.49, 31.02, 31.59	Microscope
Main Function	Optical Parametric Oscillator	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633$ nm)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S_1/S_2 facets)	S_1/S_2 @1064 (R<0.5%) /1380~1800 (R<0.5%) /1800~4500 (R<5%) nm	Spectral Analyzer
Aperture Size	12.3 x 1.0 mm ² (W x T)	Cutting Machine
Available Length	5/15/25/50 $\pm$ 0.2 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Chip Lay-Out



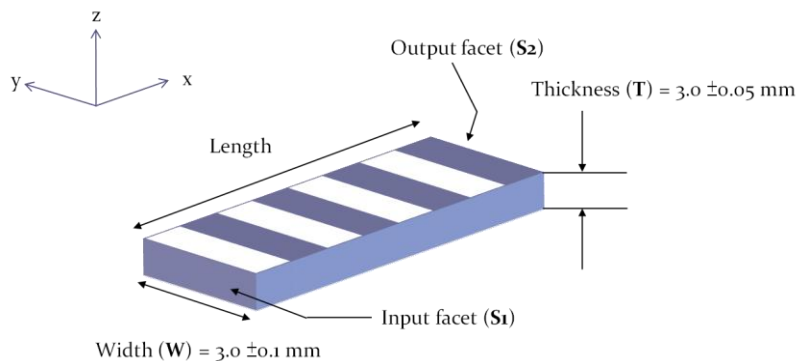
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- Phase Matching Tuning Curve



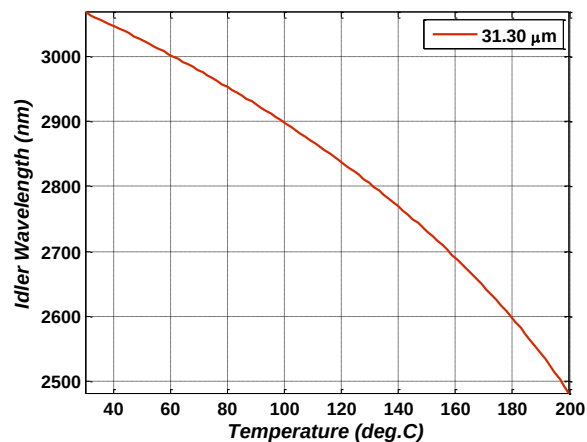
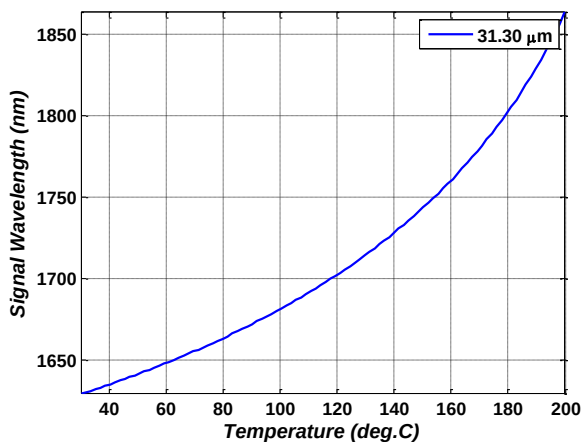
Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	27.50	Microscope
Main Function	Optical Parametric Oscillator	NA
Parallelism/Perpendicularity	$\leq 5'/21'$	Autocollimator
Flatness	$\leq \lambda/6$ ($\lambda=633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20/10$	Microscope
Optical Coating (S_1/S_2 facets)	S_1/S_2 @1064 (R<0.5%) /1380~1800 (R<0.5%) /1800~4500(R<5%) nm	Spectral Analyzer
Aperture Size	2.0 x 2.0 mm ² (W x T)	Cutting Machine
Available Length	25/50 ± 0.2 mm	
Channel Clear Aperture	≥80% (T), ≥90% (W)	NA

- Chip Lay-Out



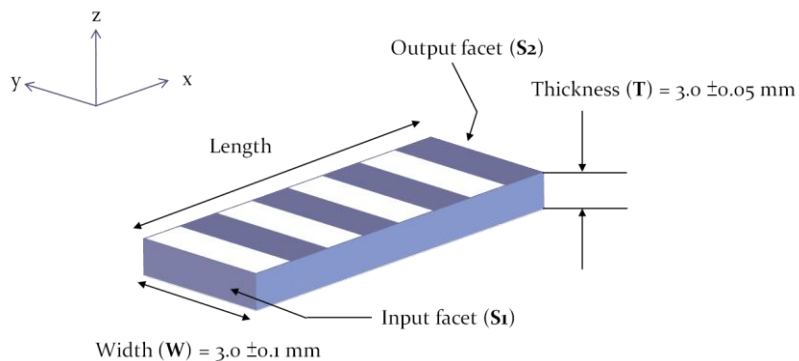
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- Phase Matching Tuning Curve



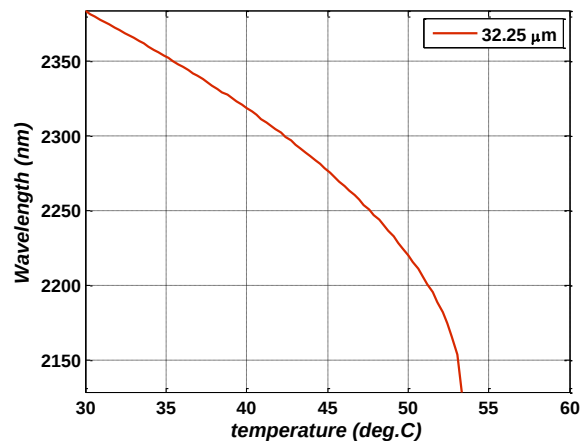
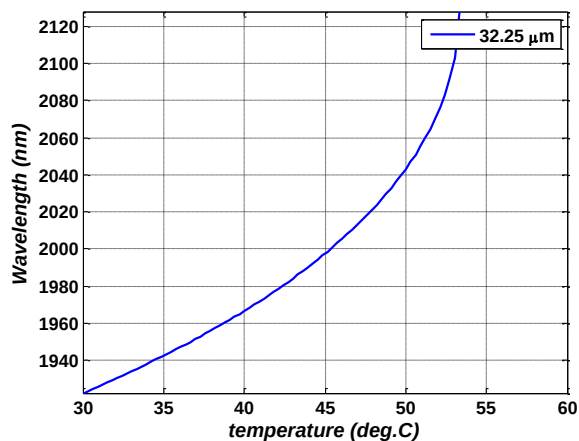
Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	31.30	Microscope
Main Function	Optical Parametric Oscillator	NA
Parallelism/Perpendicularity	$\leq 5'/21'$	Autocollimator
Flatness	$\leq \lambda/6$ ($\lambda=633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20/10$	Microscope
Optical Coating (S1/S2 facets)	S1/S2 @1064 (R<0.5%) /1380~1800 (R<0.5%) /1800~4500(R<5%) nm	Spectral Analyzer
Aperture Size	3.0 x 3.0 mm ² (W x T)	Cutting Machine
Available Length	25/50 $\pm$ 0.2 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Chip Lay-Out



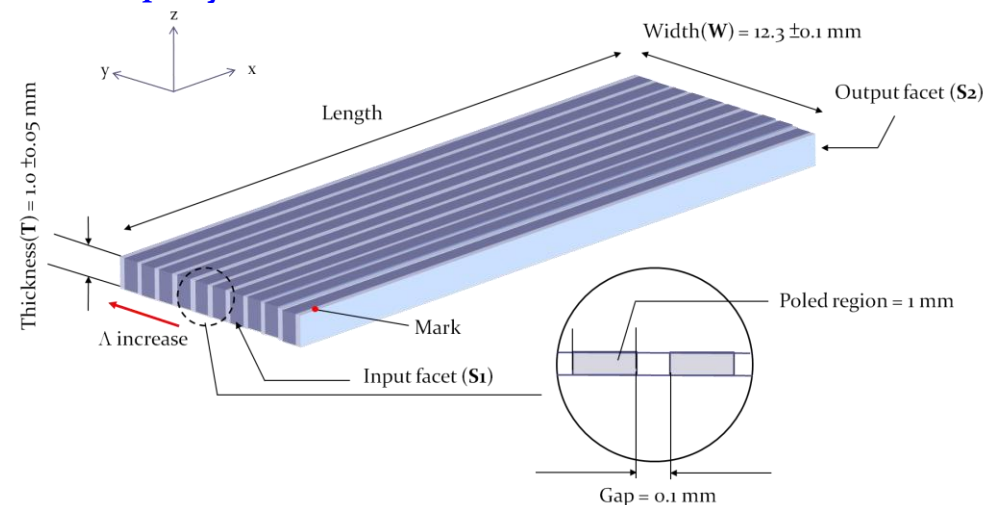
[Image for reference only. Not for scale.]

- Phase Matching Tuning Curve



Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	32.25	Microscope
Main Function	Optical Parametric Oscillator	NA
Parallelism/Perpendicularity	$\leq 5'/21'$	Autocollimator
Flatness	$\leq \lambda/6$ ($\lambda=633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20/10$	Microscope
Optical Coating (S ₁ /S ₂ facets)	S ₁ /S ₂ @1064 (R<0.5%) /1380~1800 (R<0.5%) /1800~4500(R<5%) nm	Spectral Analyzer
Aperture Size	3.0 x 3.0 mm ² (W x T)	Cutting Machine
Available Length	25/50 ± 0.2 mm	
Clear Aperture	≥80% (T), ≥90% (W)	NA

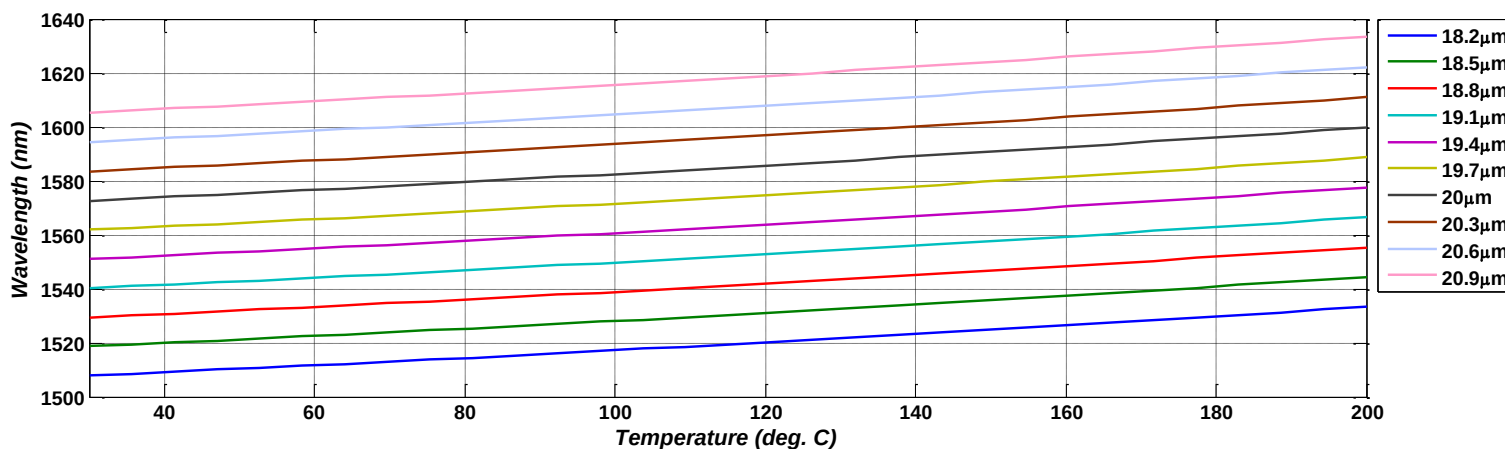
- Chip Lay-Out



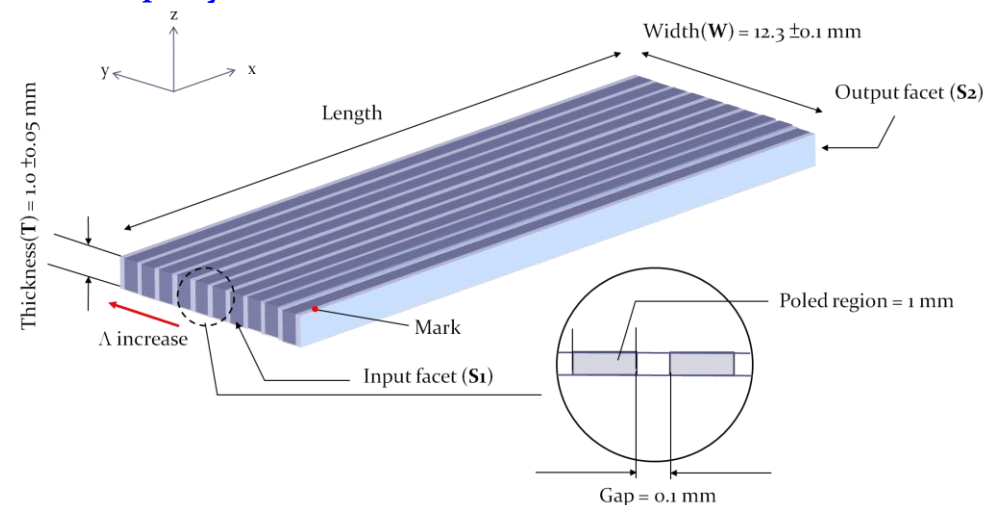
[Image for reference only. Not for scale.]

Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μ m)	18.20, 18.50, 18.80, 19.10, 19.40, 19.70, 20.00, 20.30, 20.60, 20.90	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633$ nm)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S ₁ /S ₂ facets)	S ₁ /S ₂ @750-810(R<0.5%) /1500-1620(R<0.5%) nm	Spectral Analyzer
Aperture Size	12.3 x 1.0 mm ² (W x T)	Cutting Machine
Available Length	5/15/25/50 $\pm$ 0.2 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Phase Matching Tuning Curve



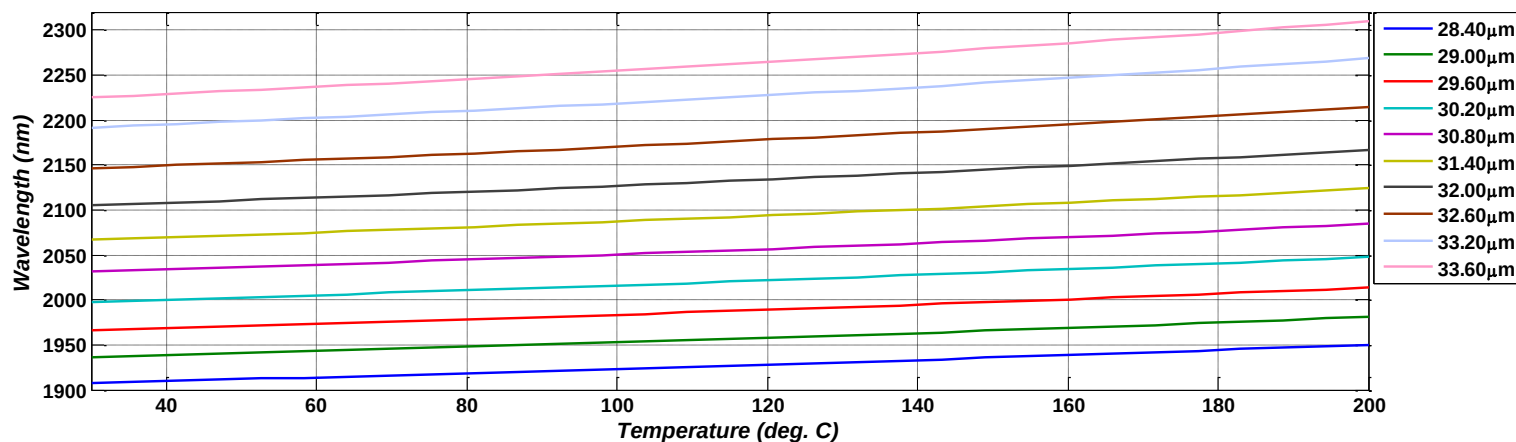
- Chip Lay-Out



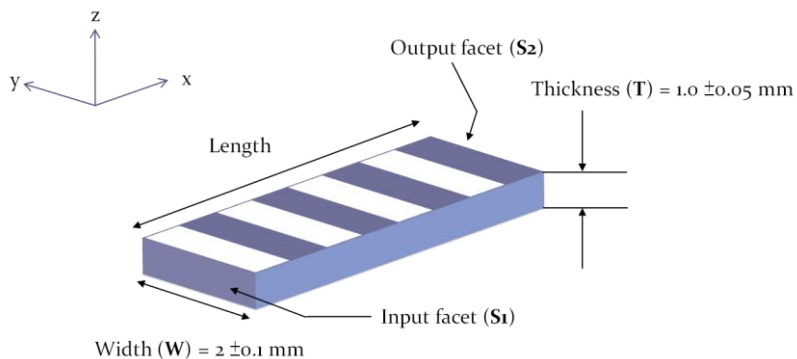
[Image for reference only. Not for scale.]

Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	28.40, 29.00, 29.60, 30.20, 30.80, 31.40, 32.00, 32.60, 33.20, 33.60	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S_1/S_2 facets)	S_1/S_2 @960-1150($R < 0.5\%$) / 1925-2300($R < 0.5\%$) nm	Spectral Analyzer
Aperture Size	12.3×1.0 mm ² (W x T)	Cutting Machine
Available Length	5/15/25/50 ± 0.2 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Phase Matching Tuning Curve



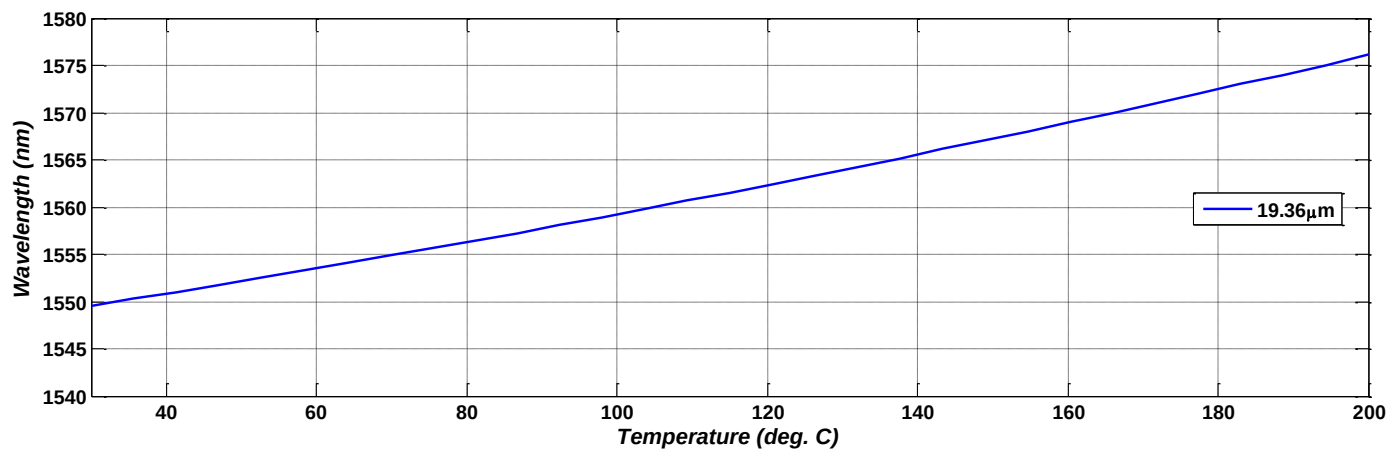
- Chip Lay-Out



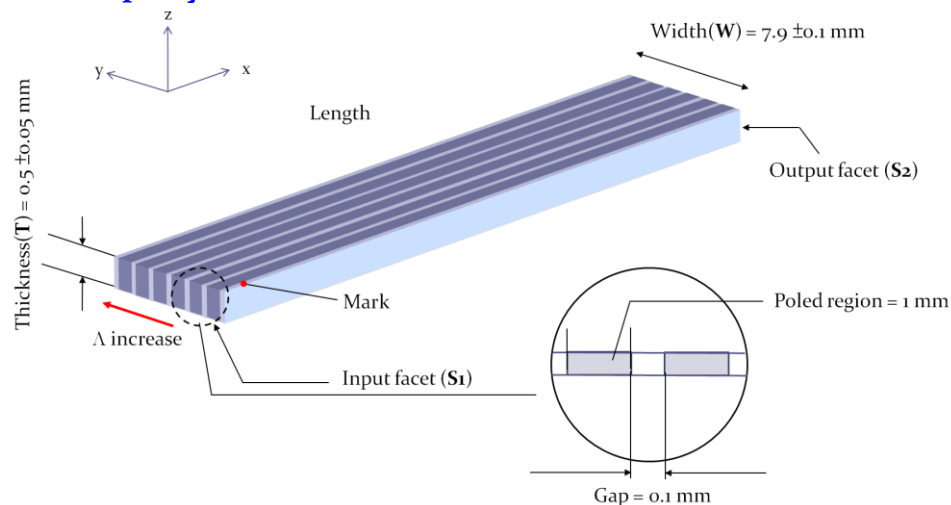
[Image for reference only. Not for scale.]

Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	19.36	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S ₁ /S ₂ facets)	775 (R<0.5%) /1550 (R<0.3%) nm	Spectral Analyzer
Aperture Size	2.0×1.0 mm ² (W x T)	Cutting Machine
Available Length	5/15/25/50 ± 0.2 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Phase Matching Tuning Curve



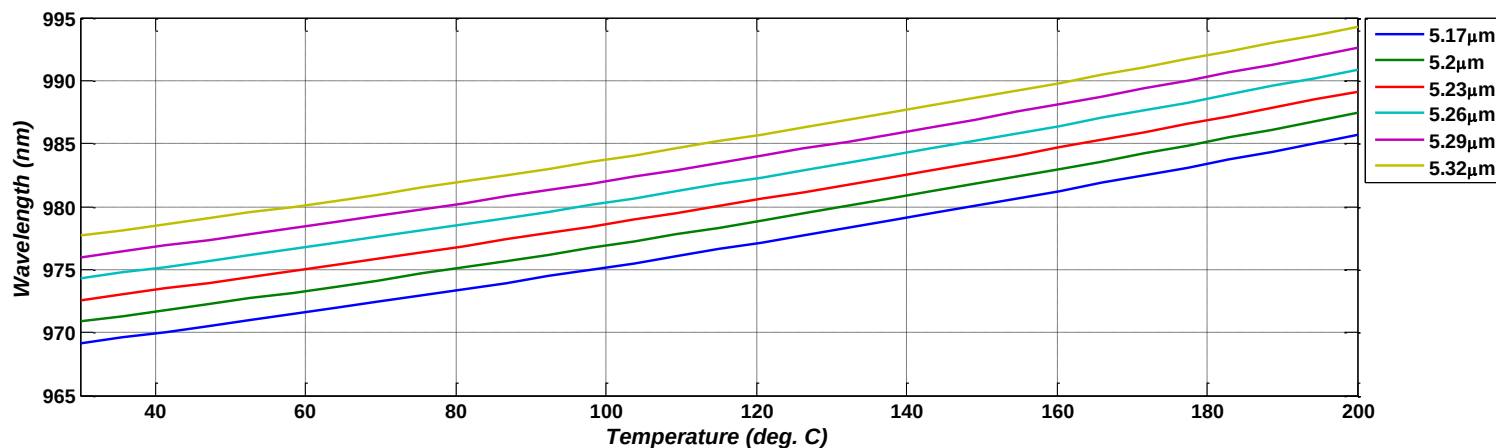
- Chip Lay-Out



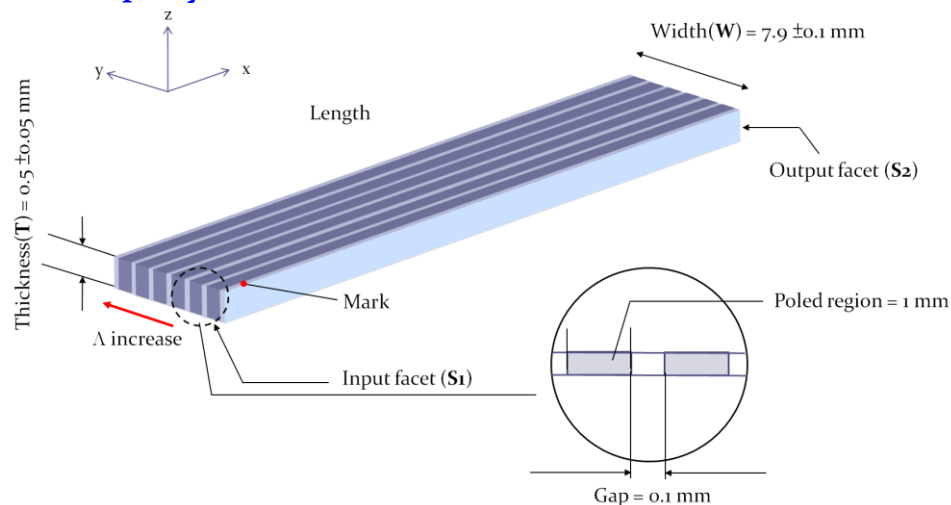
[Image for reference only. Not for scale.]

Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	5.17, 5.20, 5.23, 5.26, 5.29, 5.32	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S1/S2 facets)	S1/S2 @485~590(R<0.5%) / 970~1180(R<0.5%) nm	Spectral Analyzer
Aperture Size	7.9×0.5 mm ² (W x T)	Cutting Machine
Available Length	$5/15/25 \pm 0.2$ mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Phase Matching Tuning Curve



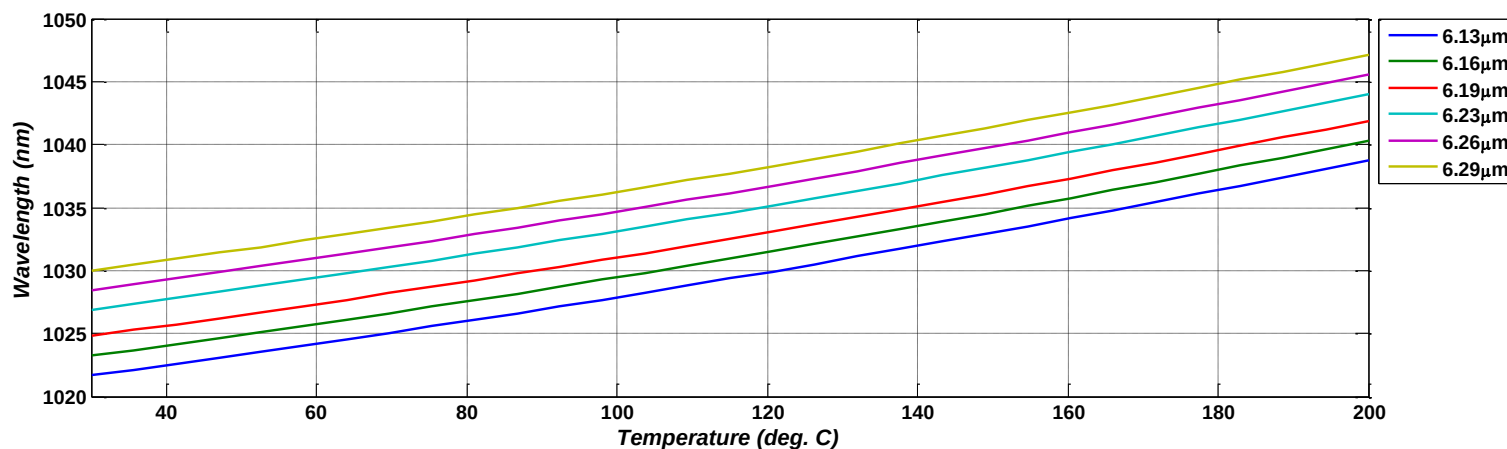
- Chip Lay-Out



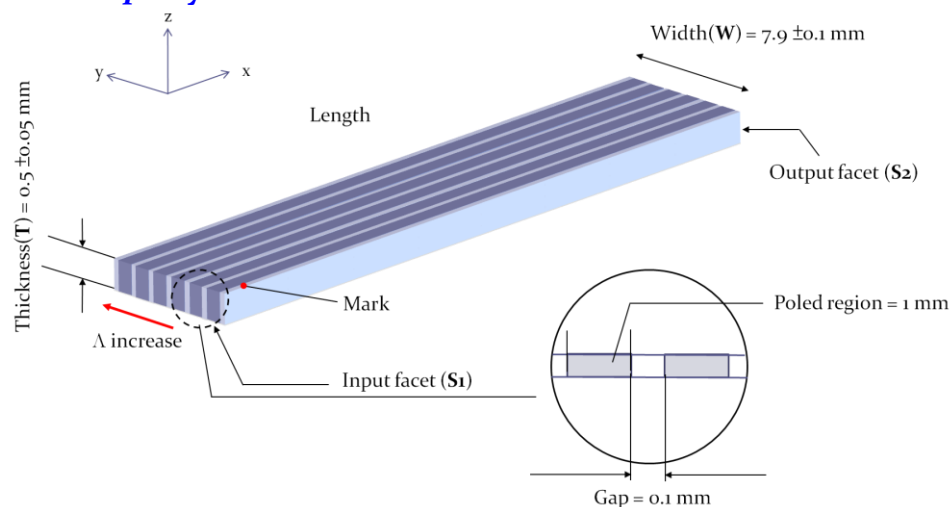
[Image for reference only. Not for scale.]

Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	6.13, 6.16, 6.19, 6.23, 6.26, 6.29	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S ₁ /S ₂ facets)	S ₁ /S ₂ @485~590(R<0.5%) /970~1180(R<0.5%) nm	Spectral Analyzer
Aperture Size	7.9 x 0.5 mm ² (W x T)	Cutting Machine
Available Length	5/15/25 $\pm$ 0.2 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Phase Matching Tuning Curve



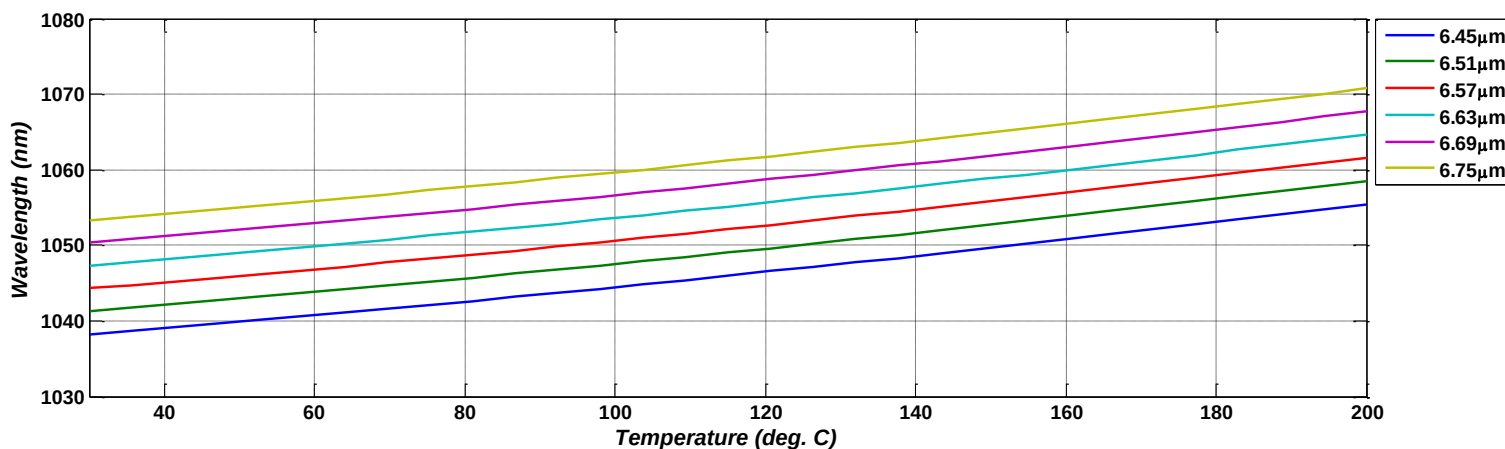
- Chip Lay-Out



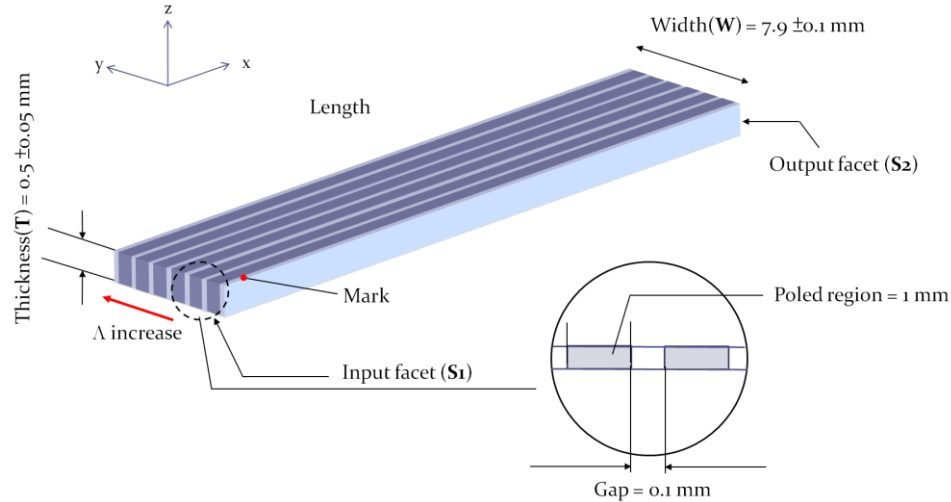
[Image for reference only. Not for scale.]

Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	6.45, 6.51, 6.57, 6.63, 6.69, 6.75	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633 \text{ nm}$)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S_1/S_2 facets)	S_1/S_2 @485~590($R < 0.5\%$) /970~1180($R < 0.5\%$) nm	Spectral Analyzer
Aperture Size	$7.9 \times 0.5 \text{ mm}^2$ ($W \times T$)	Cutting Machine
Available Length	$5/15/25 \pm 0.2 \text{ mm}$	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Phase Matching Tuning Curve



- Chip Lay-Out

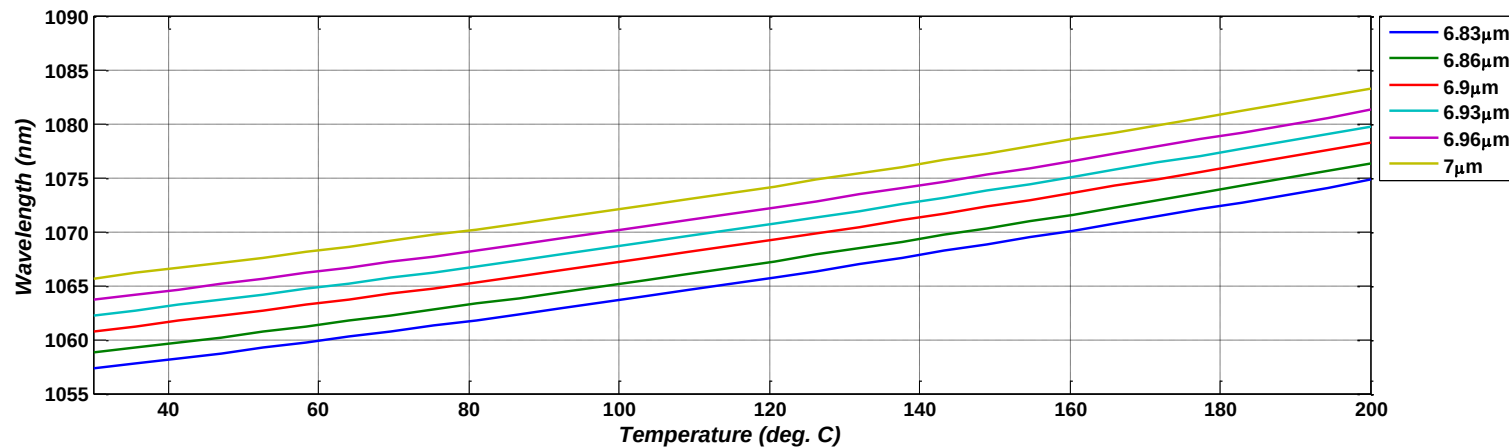


[Image for reference only. Not for scale.]

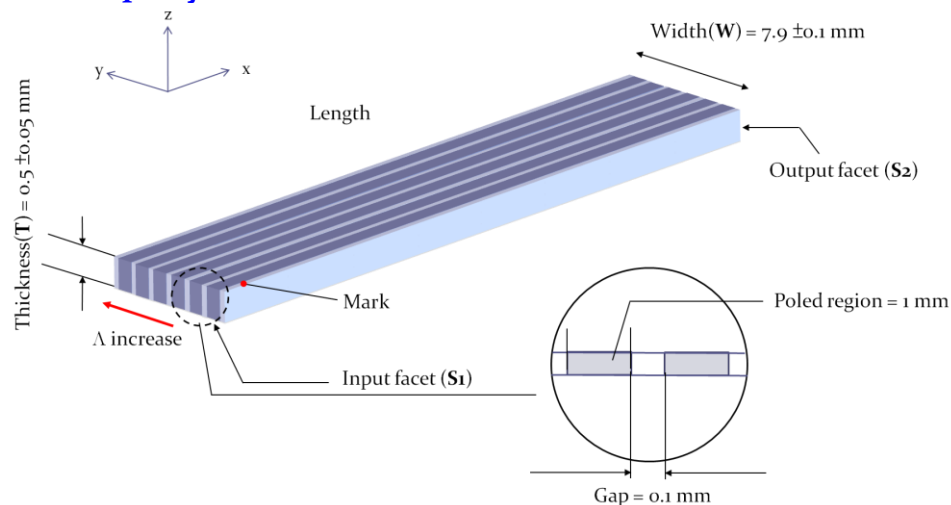
Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	6.83, 6.86, 6.90, 6.93, 6.96, 7.00	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5'/21'$	Autocollimator
Flatness	$\leq \lambda/6$ ($\lambda=633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20/10$	Microscope
Optical Coating (S_1/S_2 facets)	S_1/S_2 @485~590($R<0.5\%$) /970~1180($R<0.5\%$) nm	Spectral Analyzer
Aperture Size	$9.6 \times 0.5 \text{ mm}^2$ (W x T)	Cutting Machine
Available Length	5/15/25/50 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

*1 Refer to the length of poled grating. Physical length is 1.0 ± 0.1 mm.

- Phase Matching Tuning Curve



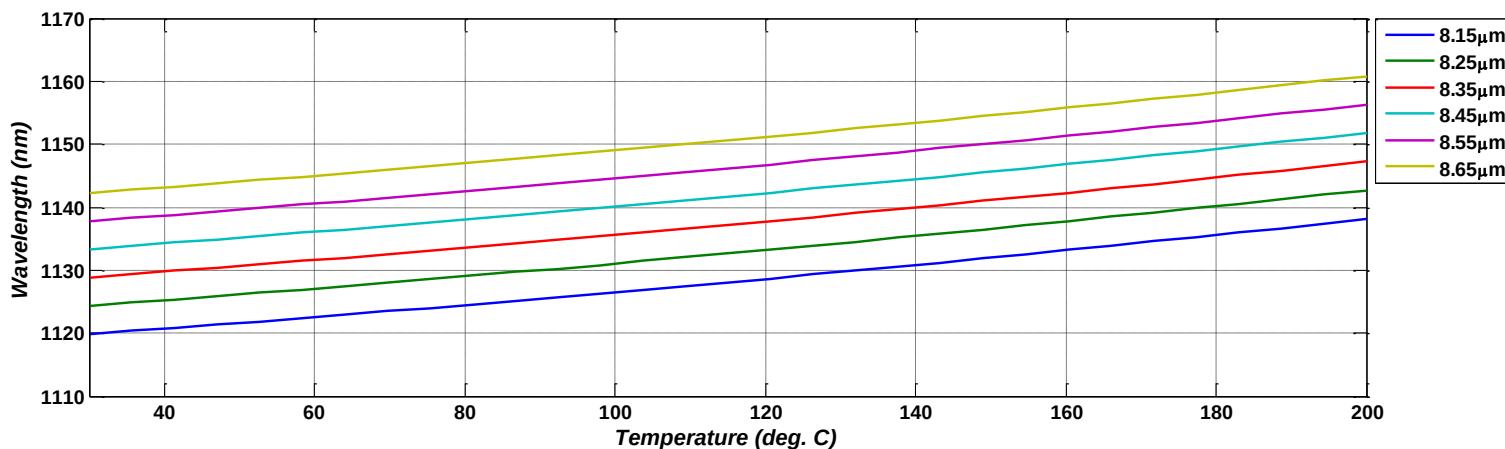
- Chip Lay-Out



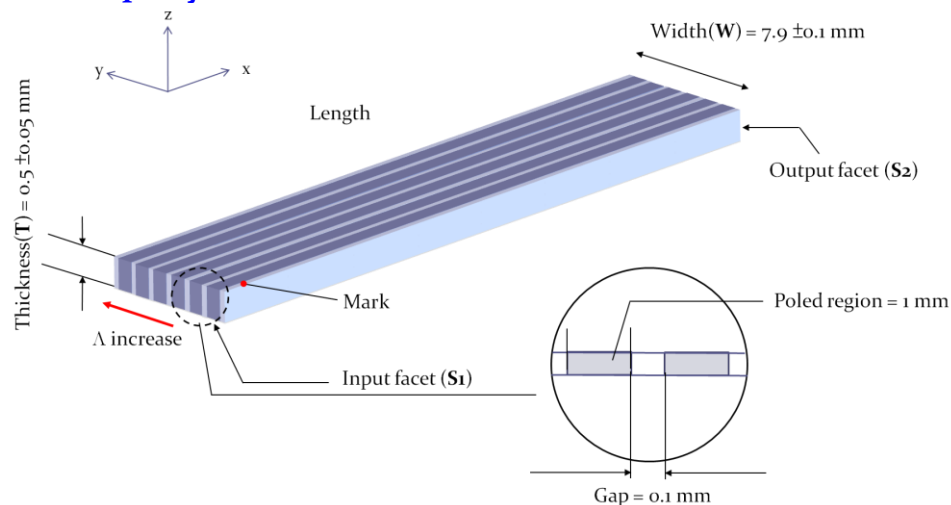
[Image for reference only. Not for scale.]

Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	8.15, 8.25, 8.35, 8.45, 8.55, 8.65	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5'/21'$	Autocollimator
Flatness	$\leq \lambda/6$ ($\lambda=633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20/10$	Microscope
Optical Coating (S_1/S_2 facets)	S_1/S_2 @485~590($R<0.5\%$) /970~1180($R<0.5\%$) nm	Spectral Analyzer
Aperture Size	7.9×0.5 mm ² ($W \times T$)	Cutting Machine
Available Length	$5/15/25 \pm 0.2$ mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Phase Matching Tuning Curve



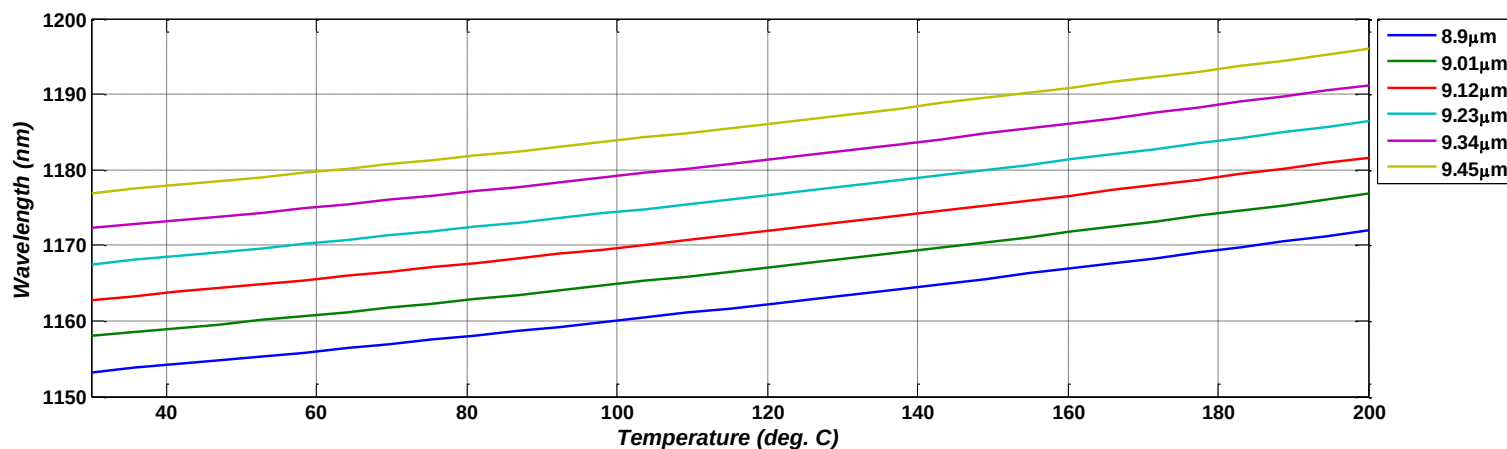
- Chip Lay-Out



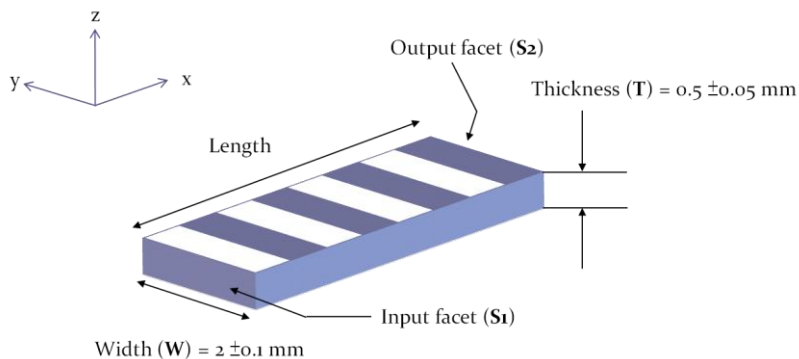
[Image for reference only. Not for scale.]

Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	8.90, 9.01, 9.12, 9.23, 9.34, 9.45	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S_1/S_2 facets)	S_1/S_2 @485~590($R < 0.5\%$) /970~1180($R < 0.5\%$) nm	Spectral Analyzer
Aperture Size	$7.9 \times 0.5 \text{ mm}^2$ ($W \times T$)	Cutting Machine
Available Length	$5/15/25 \pm 0.2 \text{ mm}$	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Phase Matching Tuning Curve



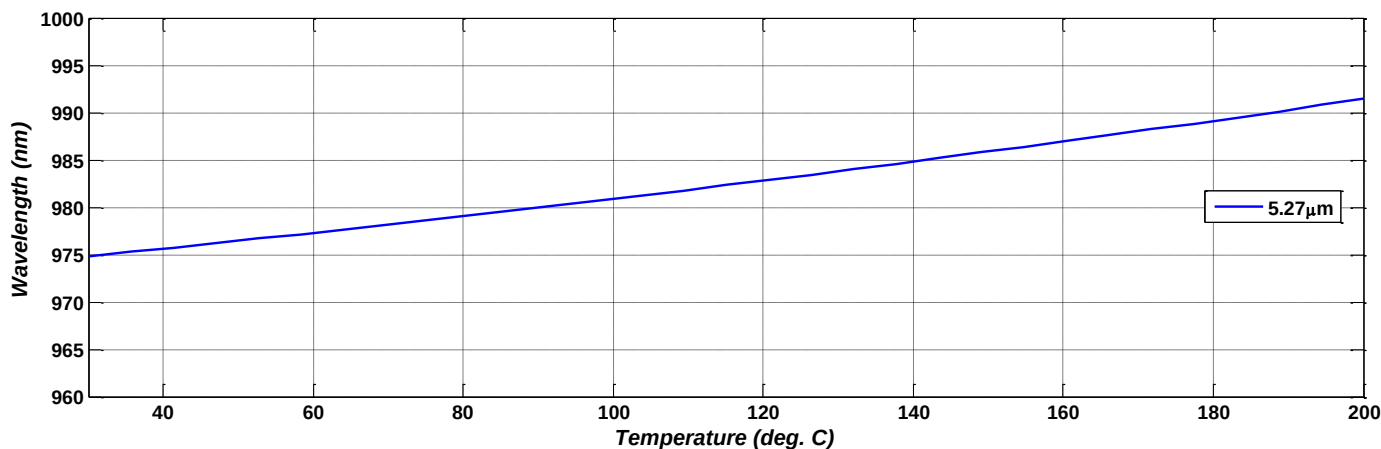
- Chip Lay-Out



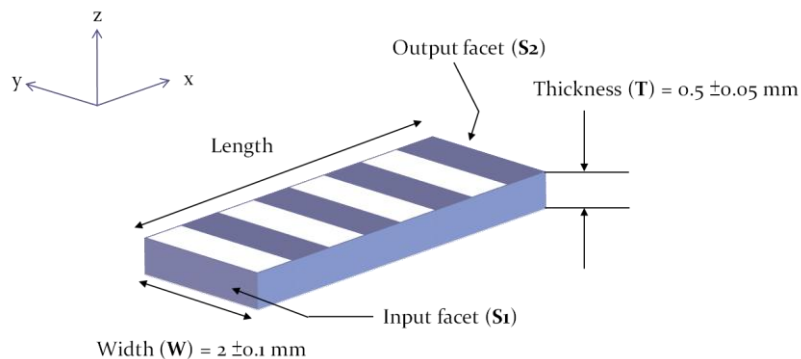
[Image for reference only. Not for scale.]

Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	5.27	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S1/S2 facets)	488(R<0.5%) /976(R<0.3%) nm	Spectral Analyzer
Aperture Size	$2.0 \times 0.5 \text{ mm}^2$ (W x T)	Cutting Machine
Available Length	$5/15/25/50 \pm 0.2 \text{ mm}$	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Phase Matching Tuning Curve



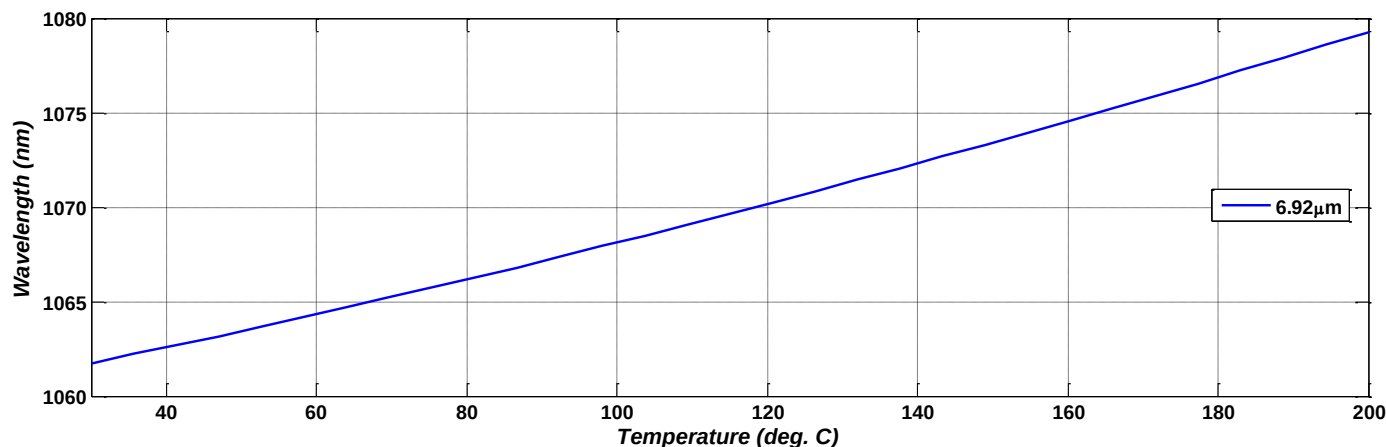
- Chip Lay-Out



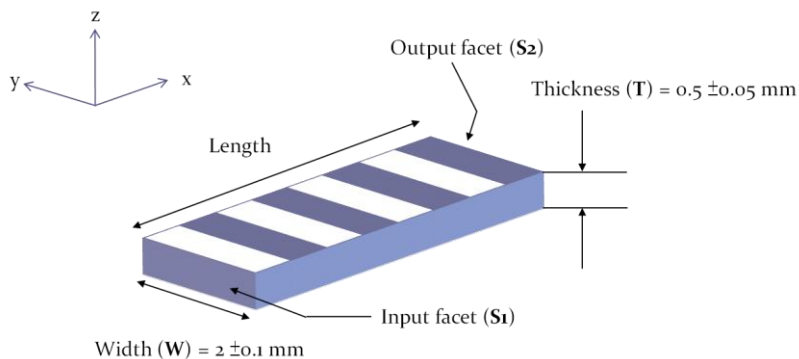
[Image for reference only. Not for scale.]

Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	6.92	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5' / 21'$	Autocollimator
Flatness	$\leq \lambda / 6$ ($\lambda = 633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20 / 10$	Microscope
Optical Coating (S ₁ /S ₂ facets)	532(R<0.5%) /1064(R<0.3%) nm	Spectral Analyzer
Aperture Size	$2.0 \times 0.5 \text{ mm}^2$ (W x T)	Cutting Machine
Available Length	$5/15/25/50 \pm 0.2 \text{ mm}$	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Phase Matching Tuning Curve



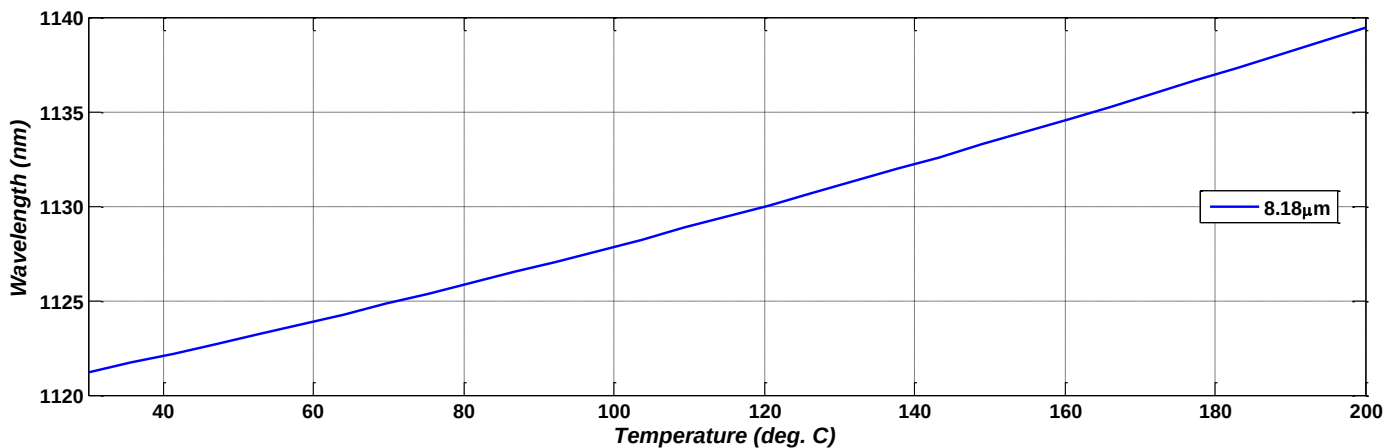
- Chip Lay-Out



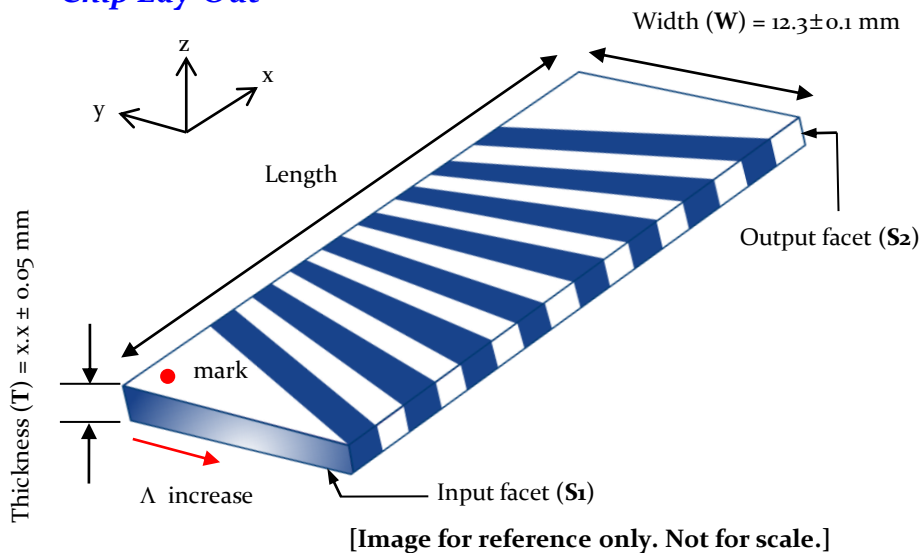
[Image for reference only. Not for scale.]

Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	8.18	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5'/21'$	Autocollimator
Flatness	$\leq \lambda/6$ ($\lambda=633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20/10$	Microscope
Optical Coating (S1/S2 facets)	561(R<0.5%) /1122(R<0.3%) nm	Spectral Analyzer
Aperture Size	2.0 x 0.5 mm ² (W x T)	Cutting Machine
Available Length	5/15/25/50 ± 0.2 mm	
Channel Clear Aperture	$\geq 80\%$ (T), $\geq 90\%$ (W)	NA

- Phase Matching Tuning Curve



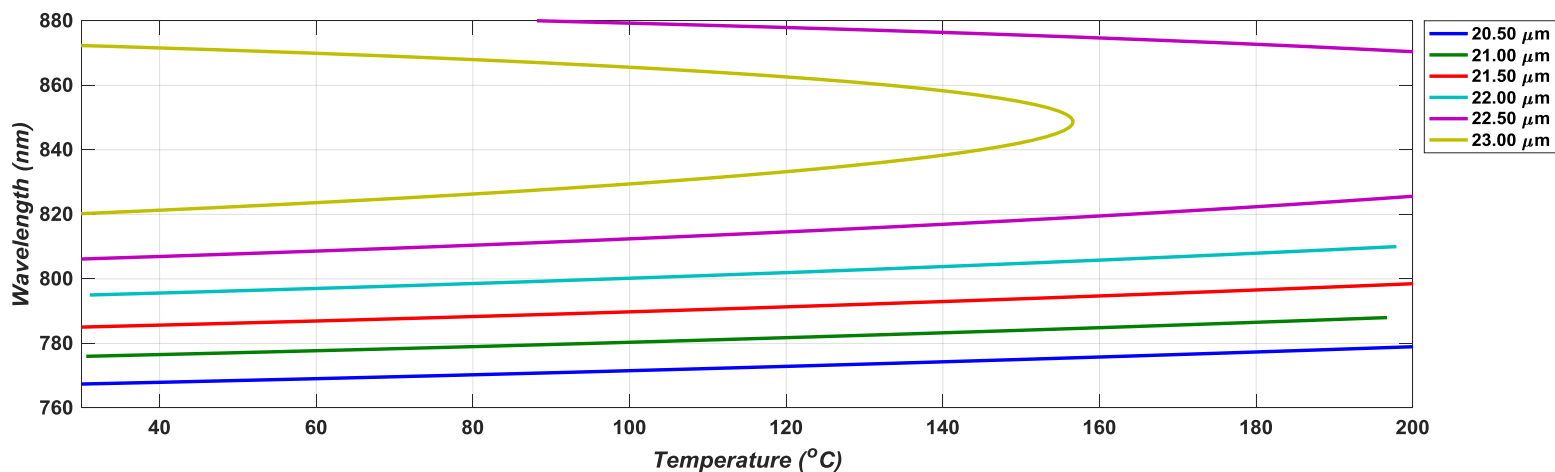
- Chip Lay-Out



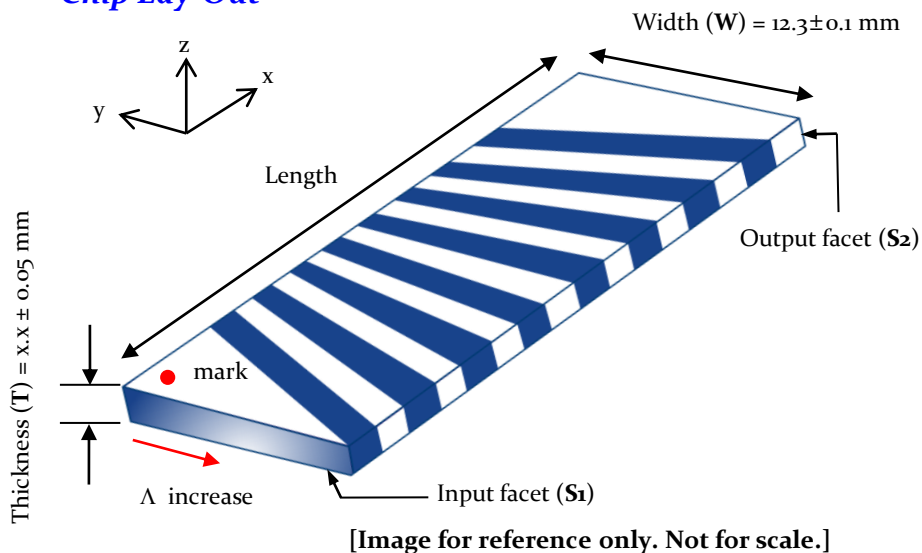
Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period ($\Lambda, \mu\text{m}$)	20.50~23.50	Microscope
Main Function	Difference Frequency Generation	NA
Parallelism/Perpendicularity	$\leq 5'/21'$	Autocollimator
Flatness	$\leq \lambda/6$ ($\lambda=633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20/10$	Microscope
Optical coating (S_1/S_2 facets)	$S_1/S_2 @ 730\sim 870(R<0.5\%)$ /1064($R<0.5\%$) /2300~4800($R<5\%$) nm	Spectral Analyzer
Aperture Size	$12.3 \times 1.0 \text{ mm}^2 (W \times T)$	Cutting Machine
Available Length	$10/25 \pm 0.2$ mm	
Clear Aperture *	$\geq 80\%$ (T), ≥ 10.9 mm (W) * ₁	NA

*₁ Poled fan-out grating width = 10.9 mm.

- Phase Matching Tuning Curve



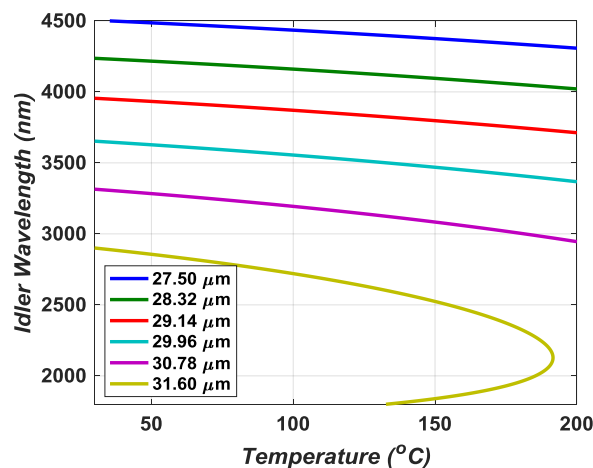
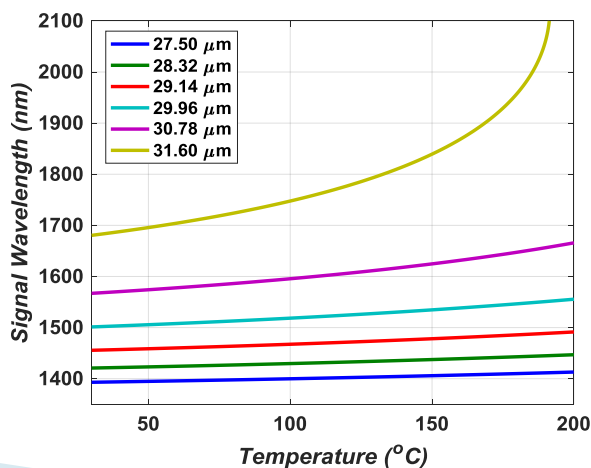
- Chip Lay-Out



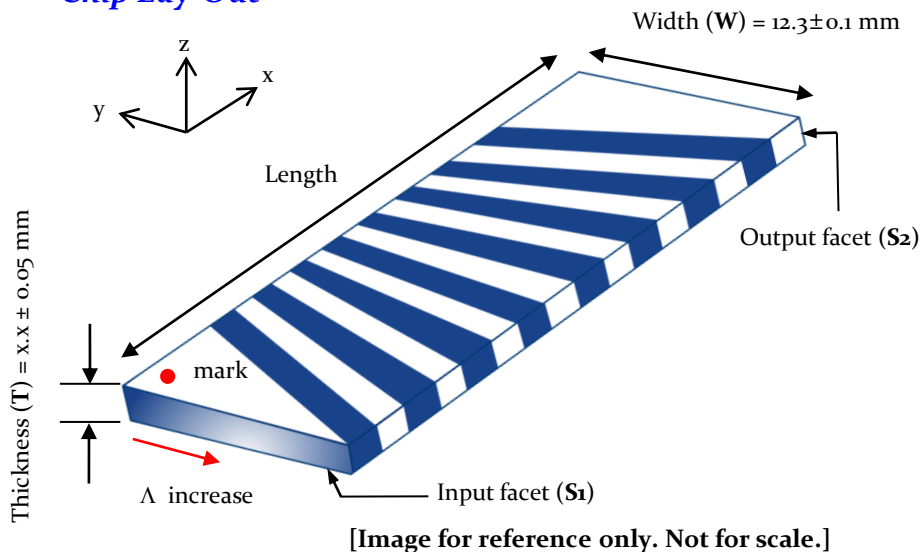
Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ, μm)	27.50~31.60	Microscope
Main Function	Optical Parametric Oscillator	NA
Parallelism/Perpendicularity	≤5' / 21'	Autocollimator
Flatness	≤λ/6 (λ=633nm)	Interferometer
Scratch/Dig	≤20/10	Microscope
Optical coating (S ₁ /S ₂ facets)	Si/S ₂ @1030~1080 (R<1.0%) /1380~1800 (R<1.0%) /1800~4500 (R<5%) nm	Spectral Analyzer
Aperture Size	12.3 x 1.0 mm ² (W x T)	Cutting Machine
Available Length	10/25 ± 0.2 mm	
Clear Aperture *	≥80% (T), ≥ 10.9 mm (W) * ₁	NA

*₁ Poled fan-out grating width = 10.9 mm.

- Phase Matching Tuning Curve



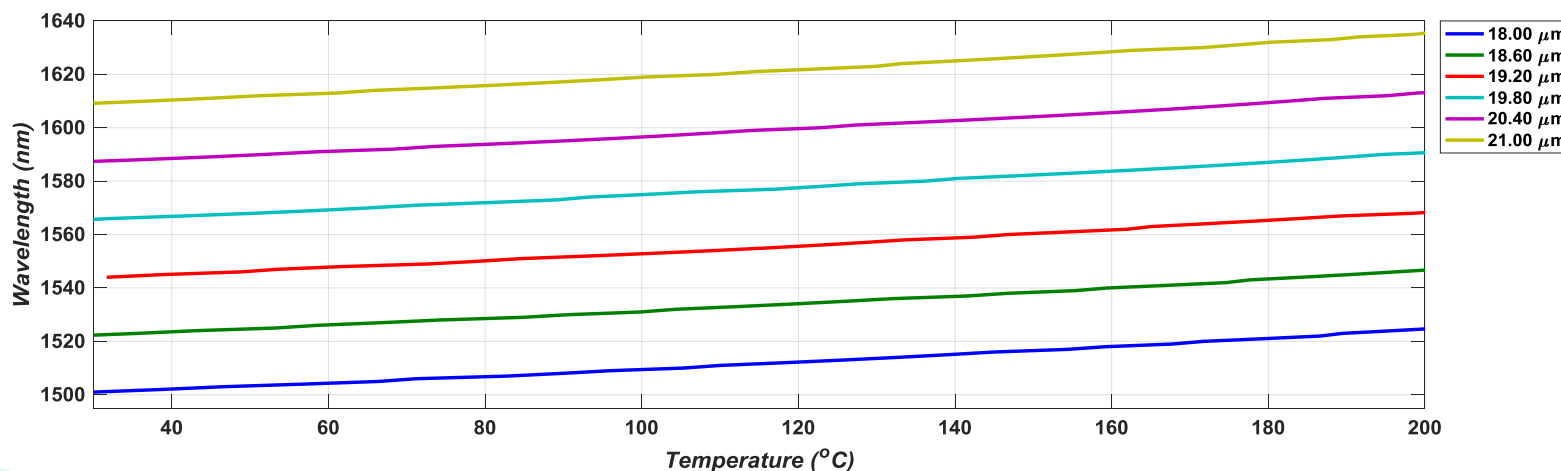
- Chip Lay-Out



Items	Properties	Inspection
Material	5 mol.% MgO:LN	NA
Period (Λ , μm)	18.00~21.00	Microscope
Main Function	Second Harmonic Generation	NA
Parallelism/Perpendicularity	$\leq 5'/21'$	Autocollimator
Flatness	$\leq \lambda/6$ ($\lambda=633\text{nm}$)	Interferometer
Scratch/Dig	$\leq 20/10$	Microscope
Optical coating (S ₁ /S ₂ facets)	S ₁ /S ₂ @750~810(R<0.5%) /1500~1620(R<0.5%) nm	Spectral Analyzer
Aperture Size	$12.3 \times 1.0 \text{ mm}^2$ (W x T)	Cutting Machine
Available Length	$10/25 \pm 0.2$ mm	
Clear Aperture *	$\geq 80\%$ (T), ≥ 10.9 mm (W) ^{*1}	NA

^{*1} Poled fan-out grating width = 10.9 mm.

- Phase Matching Tuning Curve





2~1000 μm

Period (λ)

0.3~80 mm

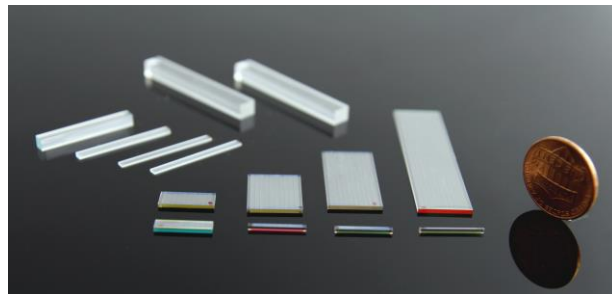
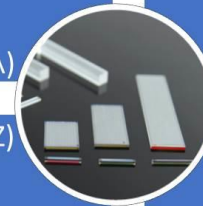
Length (X)

Thickness (Z)

0.2~5 mm

Width (Y)

0.1~40 mm



If you have any questions or if you need more information, please contact us!

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