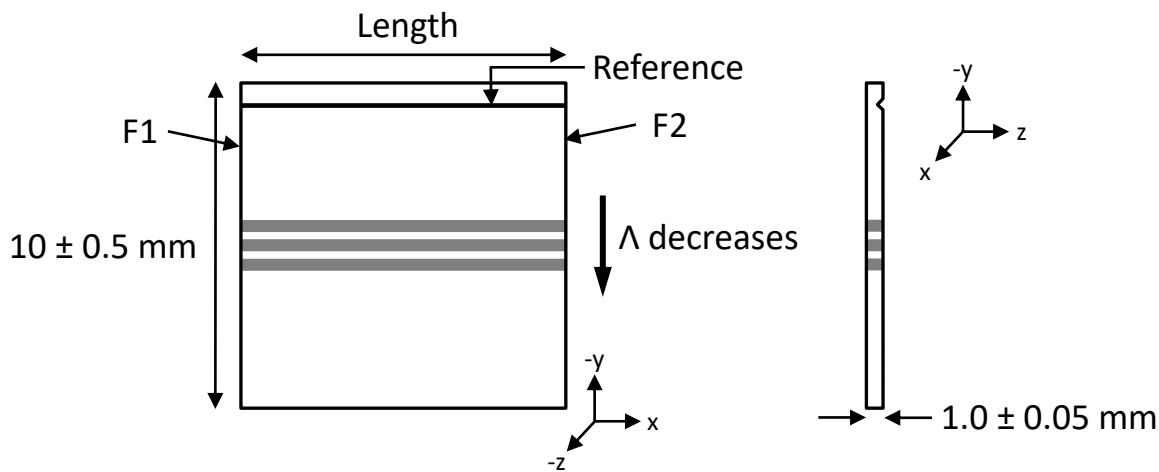


Device Specification

MSHG1020-1.0-xx

version 2.1/2021



[Image for reference only. Not to scale.]

Description MgO doped PPLN SHG crystal for 1020nm pump
Thickness(z) $1.0\text{mm} \pm 0.05\text{mm}$
Width(y) $10\text{mm} \pm 0.5\text{mm}$
Length(x) $40\text{mm} \pm 0.5\text{mm}$, $20\text{mm} \pm 0.5\text{mm}$, $10\text{mm} \pm 0.2\text{mm}$, $5\text{mm} \pm 0.1\text{mm}$, $3\text{mm} \pm 0.1\text{mm}$,
 $1\text{mm} \pm 0.1\text{mm}$
Periods(Λ) 5.84, 5.98, $6.08\mu\text{m}$

NOTES:

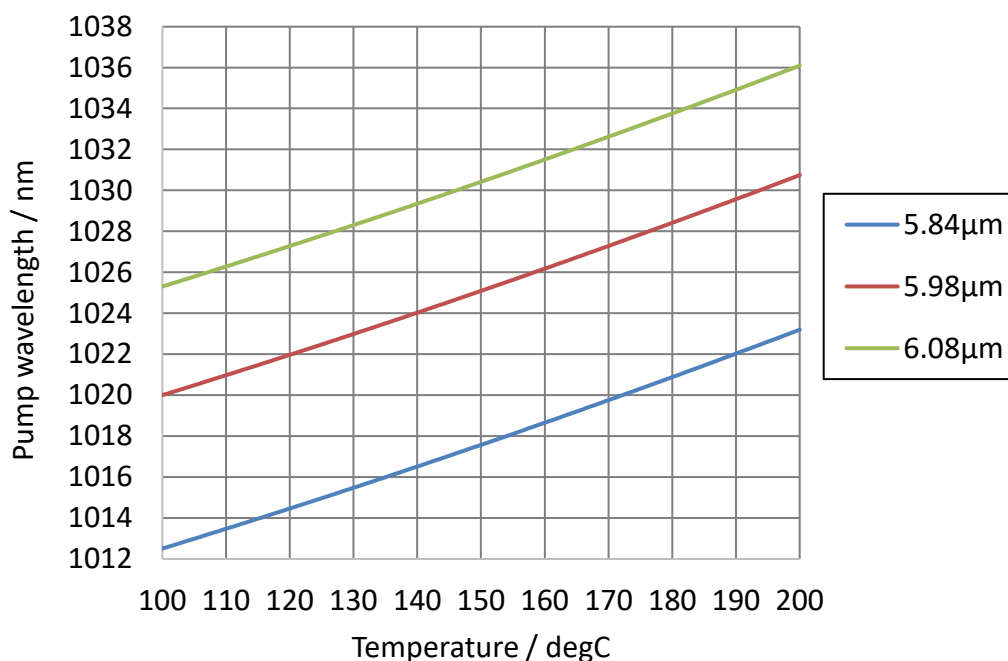
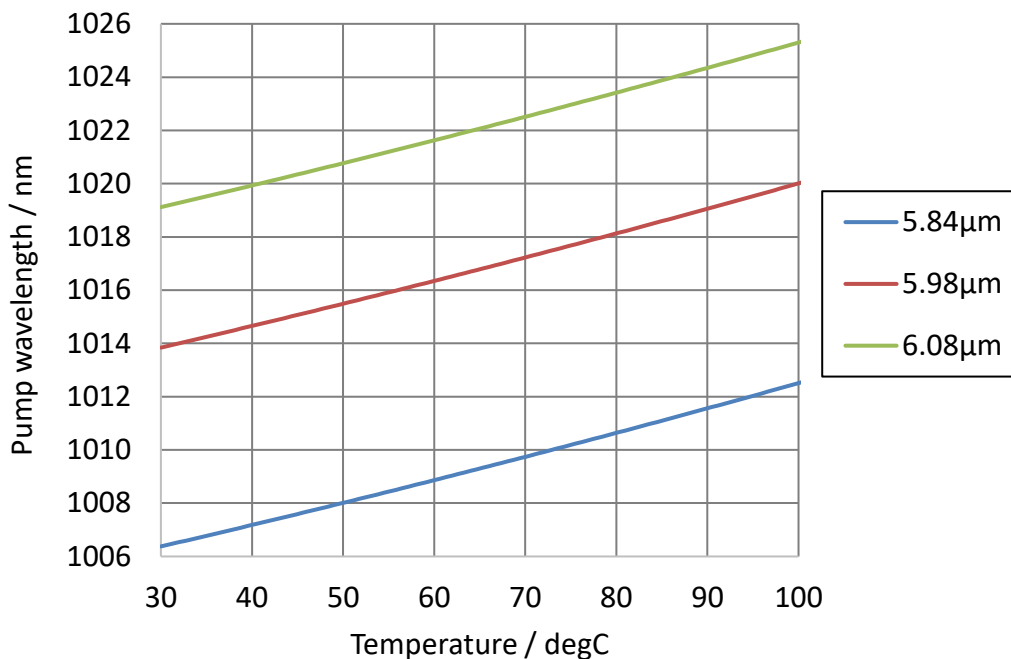
- 1 The SHG device material is congruently grown MgO doped Lithium Niobate with three periodically poled gratings. Each grating is 1.0mm wide with individual periods as listed above. A saw-cut reference mark is provided on the +z face of the crystal to determine the largest grating period (see above diagram). Each poled grating is separated by 0.2mm wide regions of unpoled material.
- 2 The average mark-to-space ratio of each grating is better than 70:30.
- 3 Each device is etched to make the poled gratings visible. Due to the wet-etch nature of this process the top and bottom surface finish of each device may appear cloudy or uneven.
- 4 Perpendicularity of input/output facets F1 and F2 to gratings is within $\pm 0.15^\circ$. Parallelism between end facets F1 and F2 is within ± 5 minutes.
- 5 Optical finish of facets F1 and F2 is within 20/10 scratch dig with $\lambda/4@633\text{nm}$. No more than two $100\mu\text{m}$ size chips per end facet.
- 6 Triple band AR coating to less than $R < 0.2\%$ at 1020nm and $R < 0.5\%$ at 510nm on both input/output facets.

Device Specification

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SHG Tuning Curve for 1020nm Pump



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