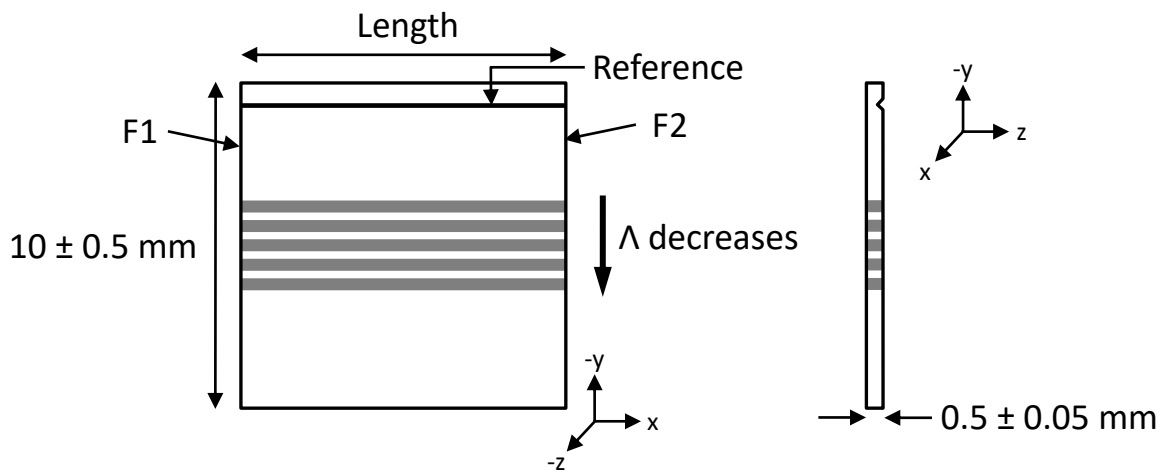


Device Specification

MDFG2-0.5-xx

version 3.0/2020



[Image for reference only. Not to scale.]

Description MgO doped PPLN DFG crystal for 1064nm and 775-869nm
Thickness(z) $0.5\text{mm} \pm 0.05\text{mm}$
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) 20.90, 21.20, 21.50, 21.80, 22.10, 22.40, 22.70, 23.00, 23.30 μm

NOTES:

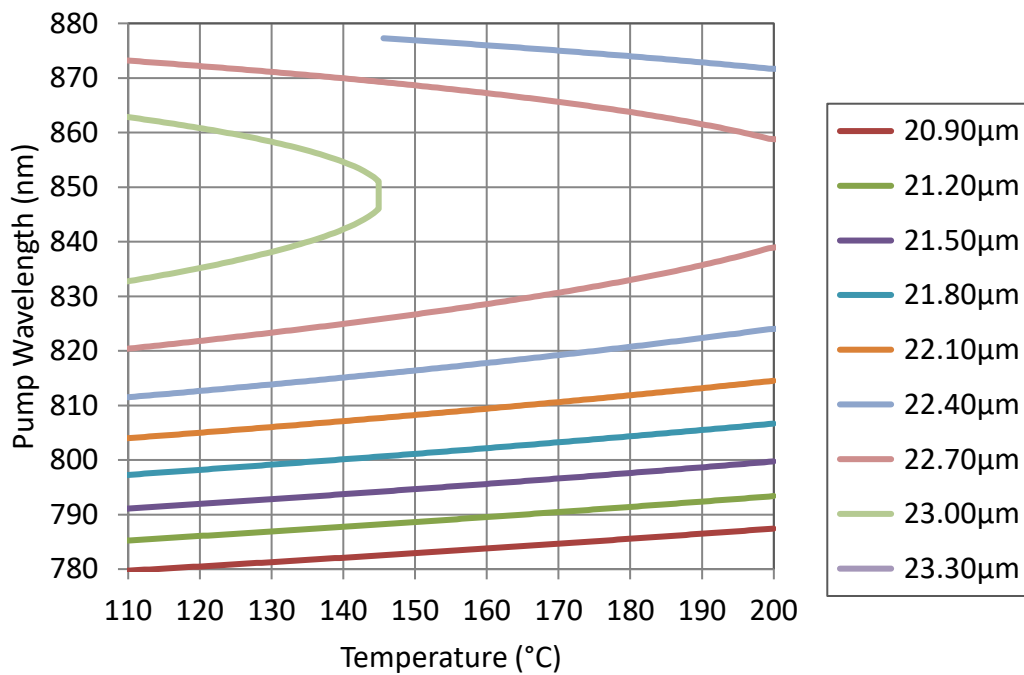
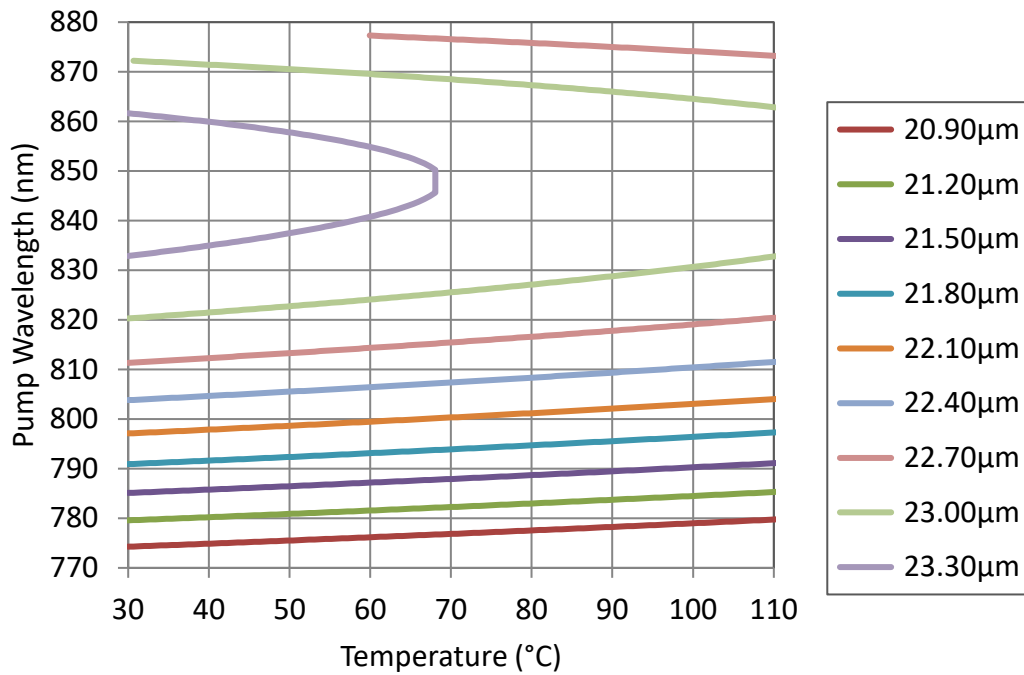
- 1 The DFG device material is Magnesium doped Lithium Niobate with nine periodically poled gratings. Each grating is 0.5mm wide with individual periods as listed above. A saw-cut reference mark is provided on the +z face of the crystal to determine the largest grating period (see above diagram). Each 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 $\lambda/8@1064\text{nm}$. No more than two 100 μm size chips per end facet.
- 6 AR coated to $R < 1.5\%$ @ 700-1100nm for the input facet (F2) and 2.4-4.8 μm for the output facet (F1).

Device Specification

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DFG Tuning Curve for 1064nm Pump



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