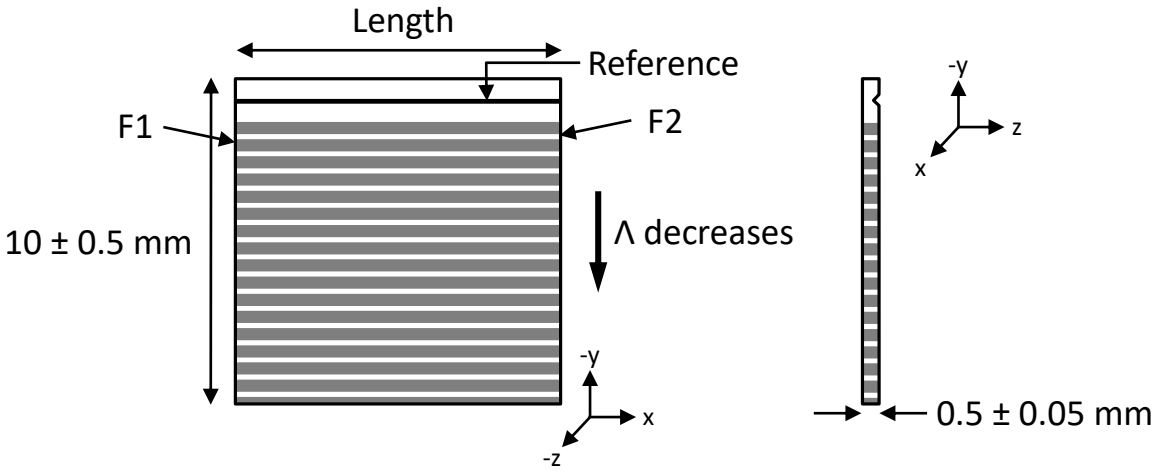
Device Specification

MDFG4-0.5-xx

version 2.0/2018



[Image for reference only. Not to scale.]

Description	MgO doped PPLN DFG crystal for 1550nm and 885-1210nm
Thickness(z)	0.5mm± 0.05mm
Width(y)	10mm±0.5mm
Length(x)	40mm±0.5mm, 20mm±0.5mm, 10mm±0.5mm, 3mm±0.1mm, 2mm±0.1mm, 1mm±0.1mm
Periods(Λ)	24.06, 24.63, 25.23, 25.86, 26.53, 27.22, 27.96, 28.74, 29.56, 30.43, 31.35, 32.33, 33.37, 34.48, 35.67, 36.95µm

NOTES:

1 The DFG device material is Magnesium doped Lithium Niobate with sixteen 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 0.05mm wide regions of unpoled material.

2 For 1/2/3mm long crystal, period can be used from 25.23um. For DFG application of 1550nm and 885-1210nm, periods from 31.35um to 36.95um are not used.

3 The average mark-to-space ratio of each grating is better than 70:30.

4 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.

5 Perpendicularity of input/output facets F1 and F2 to gratings is within ±0.15°. Parallelism between end facets F1 and F2 is within ±5 minutes.

6 Optical finish of facets F1 and F2 is within 20/10 scratch dig with λ/8@1064nm. No more than two 100µm size chips per end facet.

7 Triple-band AR coating at pump/signal/idler wavelengths on both facets.

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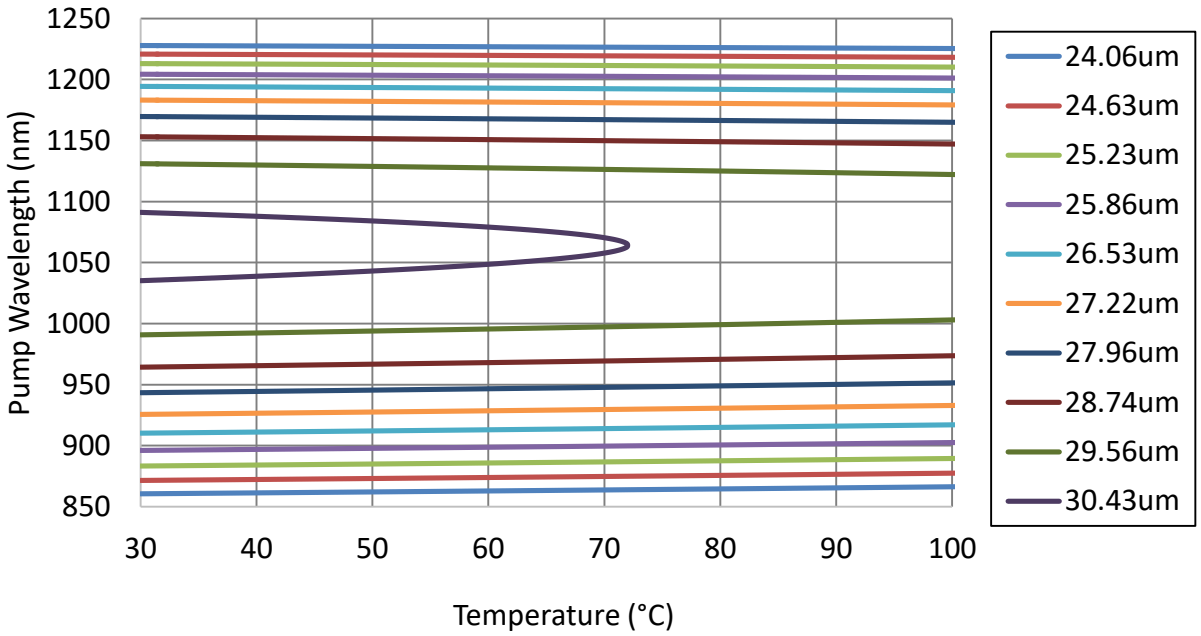
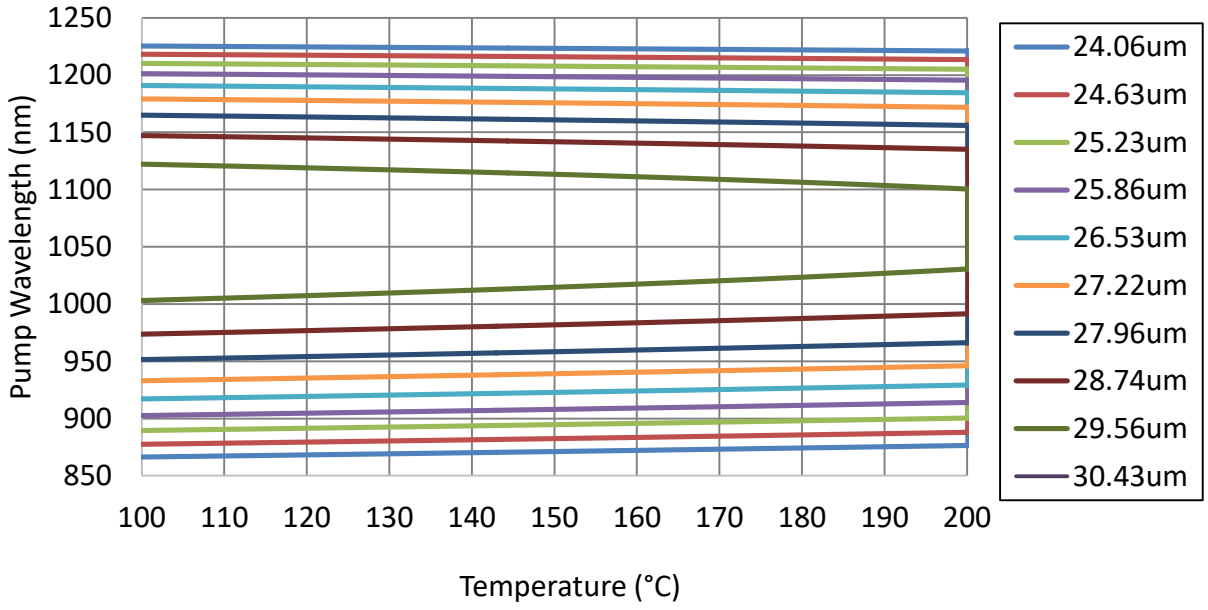
DFG Tuning Curve for 1550nm Pump





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