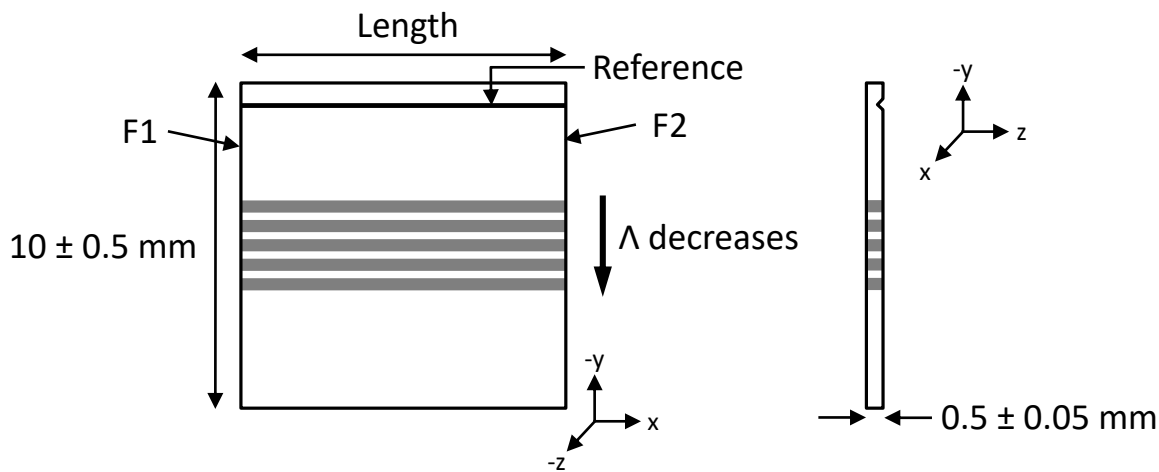


Device Specification

MSFG647-0.5-xx

version 1.0/2017



[Image for reference only. Not to scale.]

Description MgO doped PPLN SFG crystal for 1550.12nm and 1109.68nm generating 646.7nm
Thickness(z) $0.5\text{mm} \pm 0.05\text{mm}$
Width(y) $10\text{mm} \pm 0.5\text{mm}$
Length(x) $40\text{mm} \pm 0.5\text{mm}$, $20\text{mm} \pm 0.5\text{mm}$, $10\text{mm} \pm 0.2\text{mm}$, $3\text{mm} \pm 0.1\text{mm}$, $1\text{mm} \pm 0.1\text{mm}$
Periods(Λ) 12.10, 12.30, 12.50, 12.70, 12.90 μm

NOTES:

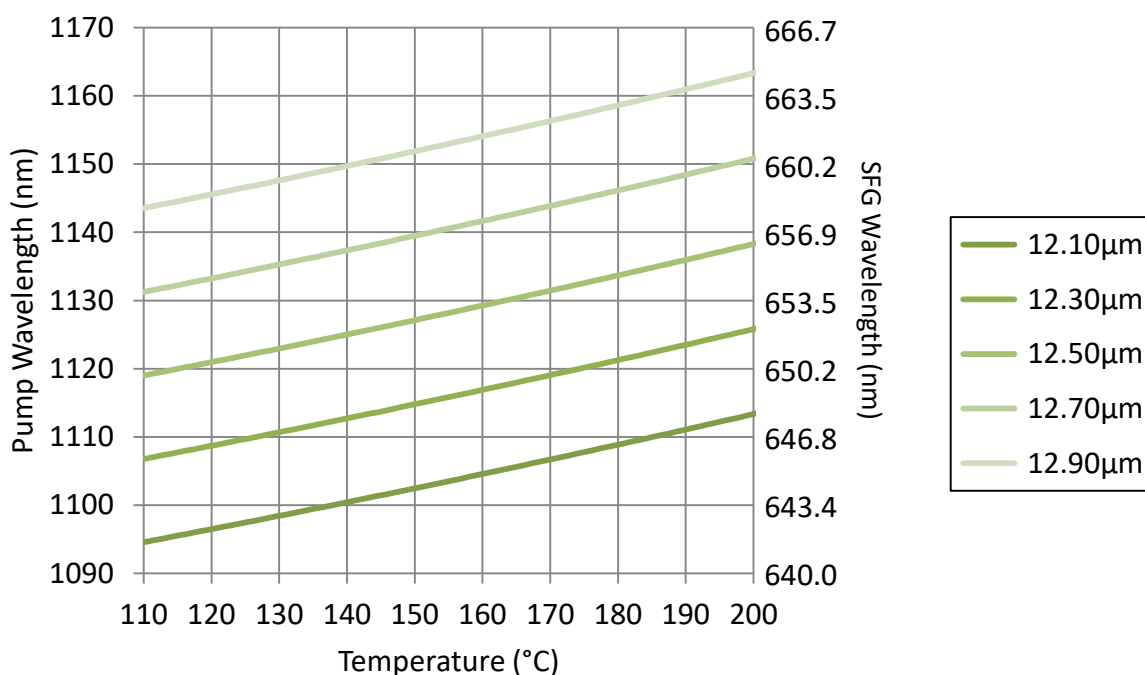
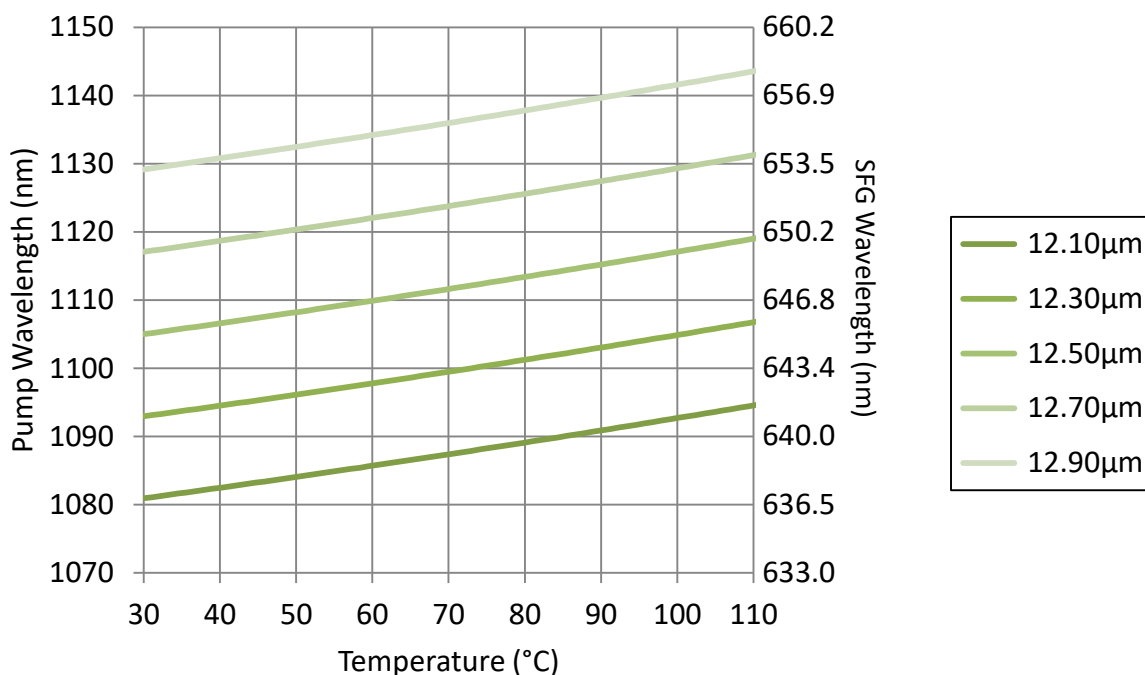
- 1 The SFG device material is Magnesium doped Lithium Niobate with five periodically poled gratings. Each grating is 0.5mm wide with individual periods as listed above. A saw-cut reference mark is provided on the +z face of the crystal to determine the largest grating period (see above diagram). Each 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 $\lambda/4@633\text{nm}$. No more than two 100 μm size chips per end facet.
- 6 Triple-band AR coating to $R < 1\%$ 1110nm, 1550nm and 646.7nm on both input/output facets.

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SFG Tuning Curve for 1550nm Pump



Please note these are calculated tuning curves only and actual values may vary.

For more information, please contact us at:

tel: +44 (0)1794 521 638

fax: +44 (0)8709 289 714

email: sales@covesion.com

www.covesion.com

Covesion Ltd. Unit A7, The Premier Centre, Premier Way, Romsey, SO51 9DG, UK

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