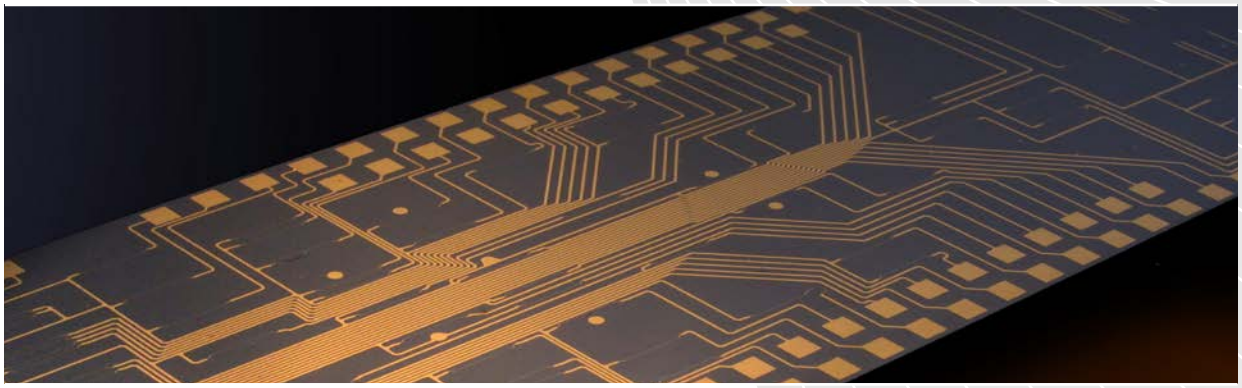
Multi project Wafer Run (MPW) 1550nm



1550nm: Optimized for telecom/datacom, sensing, quantum technology and more

The LioniX International 1550 nm MPW, typically optimized to integrate into telecom and datacom networks, is also ideally suited to a wider range of applications. These include photonic sensing and quantum applications. To enable the perfect match with your application, our 1550nm MPW provides:

- low propagation loss at c-band telecom wavelengths
- ideal coupling to fibres with spot size converters
- standard building blocks – bends, splitters, directional couplers
- specialised characterisation and packaging service available.

Now available in MPW: Tuneable laser building block – see overleaf

Waveguide specification

Low loss TriPleX™

Our MPWs benefit from our low-loss proprietary silicon nitride waveguide technology TriPleX™. These are:

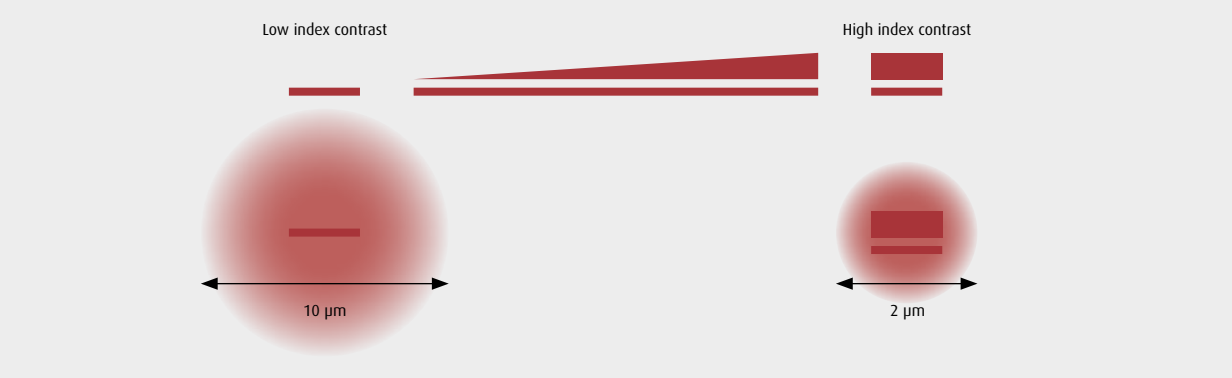
- single mode (TE)
- minimum bend radius: 80 micron
- spot size conversion for efficient fiber coupling
- low loss fiber coupling < 1db per facet.

Waveguide properties	Performance at 1550 nm (TE_{∞})
Effective index of mode	1.530 ± 0.005
Group index of mode	~ 1.77
Channel bifringence (straight waveguide)	> 10^{-2}
Propagation loss (straight waveguide)	≤ 0.5 dB/cm

Spot-size conversion

The unique TripleX™ cross-section allows accurate tapering for conversion between modefield confinement for:

- low propagation losses on-chip and high integration of functionality
- low loss coupling to almost any external component, including PM fiber, InP and Si (SOI) for different modefield diameters.



Waveguide tapering for different cross-section, index contrast and modefield size

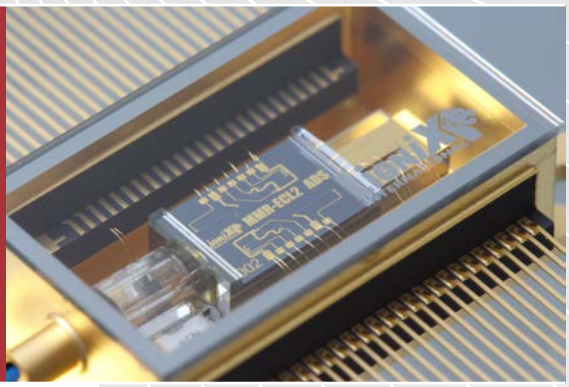
Key building blocks

Our design library has everything you need to create complex structures from validated and specified building blocks. We also offer a number of unique building blocks with advanced functionality including:

ADVANCED BUILDING BLOCK:

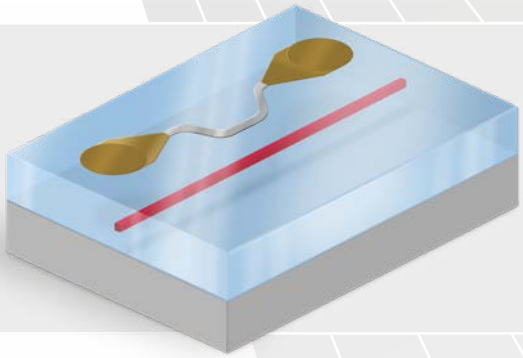
Ultra-narrow linewidth tuneable laser

- Ultra-narrow linewidth <100 kHz
- On-chip power >1 mW
- Tuneable across full range of c-band
- Performance comparable with external cavity lasers
- Configurable functionality on-chip including further switching, filtering and splitting.



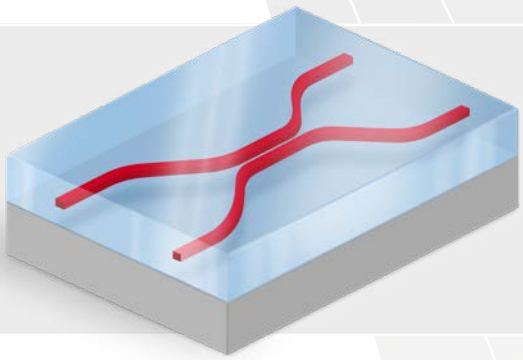
Thermo optic modulators

- Based on a chromium heater
- Resistance of 500-600 Ω
- Switching time of ~1 ms
- 2 mm length for 2π tuning
- Various layouts available.



Directional coupler

- Optical 50:50 power splitter
- Splitting accuracy around 10%.



Next steps

Download our MPW design manual at: **https://photonics.lionix-international.com/mpw-overview-manual/**

Download our top tips for MPW designers at: **https://photonics.lionix-international.com/mpw-top-tips/**

Questions and quotations please contact our MPW team: **mpw@lionix-int.com**

Our chips drive your business

LioniX International
PO Box 456
7500 AL Enschede
The Netherlands

Email: info@lionix-int.com
Phone: +31 53 20 30 053
www.lionix-international.com

LioniX INTERNATIONAL

www.lionix-international.com