

Low loss Photonic Integrated Circuits (PICs) at a small footprint

We enable Quantum computing, LiDAR, high-speed optical communication, bio-sensing and narrow linewidth lasers.

<p>LOW SYSTEM COST (bend radius < 50 μm)</p> <p>LOW OPTICAL LOSSES (< 0.1 dB/cm)</p> <p>POWER HANDLING (> 10 W CW @ 1550 nm)</p> <p>BROAD OPERATIONAL WAVELENGTH (400 nm - 4 μm)</p>	<p>SHORT TURN AROUND (9 WEEKS)</p> <p>DEVELOPED FOR PHOTONICS ICs</p> <p>HIGH YIELD AND STABLE PROCESS</p> <p>VERIFIED DESIGNS</p>
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DESIGN FLEXIBILITY

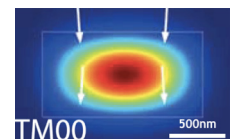
Established Process Design Kit in Synopsis and Luceda. Additional modules include:

<p>X2. Multi level photonic circuits</p>	<p>LoCA. Local cladding open for sensing and bonding</p>	<p>M1. High efficiency heater module for thermo-optic tuning</p>	<p>ExSpot. Spot size converters for mode matching to SMF in 1550nm</p>
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<p>Low loss delay line</p>	<p>Splitter</p>	<p>Mach-Zehnder Interferometer</p>	<p>Phase shifter</p>	<p>Tunable Mach-Zehnder</p>	<p>Tunable ring resonator</p>
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MEASURED PERFORMANCE

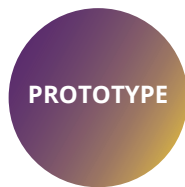
Performance measurements with LIGENTEC validated design @ 1550nm wavelength



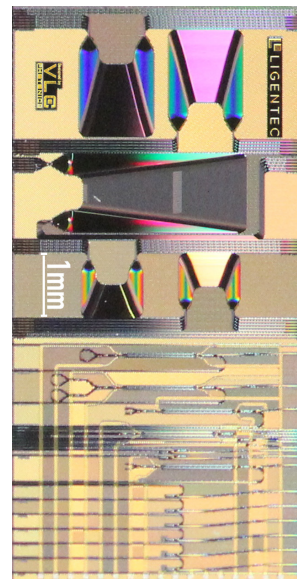
ALL-NITRIDE PERFORMANCE	
Bending loss at 50 μm radius	< 0.005 dB
Propagation loss	< 0.1 dB/cm
Minimum feature size	200 nm
Mode field diameter for edge coupling	> 2-10 μm (customizable)
SPC Control Process	

IP BLOCKS PERFORMANCE AN800	
Delay line IP block	< 5 dB/m
Mach Zehnder Interferometer (rejection)	> 22 dB
High Q Resonator	> $2 \cdot 10^6$ $20 \cdot 10^6$ (best measured)
Fiber chip coupling loss	< 1.5 dB
Thermal Tuning	> 4 nm, 4π - shift π - shift < 100 mW

LIGENTEC OFFERING



	CHIPS (5 x 10 mm or custom)
- MULTI PROJECT WAFERS	7 - 20
- CUSTOM PROTOTYPING	> 50
- PILOT PRODUCTION	> 2000
- VOLUME PRODUCTION	> 10 000



CUSTOM PROTOTYPING

Start at any time, fast track option, custom thickness, custom quantities.

MULTI PROJECT WAFERS SERVICE

LIGENTEC enables you an easy way to access our All-Nitride core technology for photonic integrated circuits through the Multi Project Wafer (MPW) service and offer low entry barrier to test the low loss technology. After Tape-out LIGENTEC will perform a DRC check on your design and you will have time provide a DRC free design.

MPW number	SiN thickness	Registration deadline	Tape-out	Expected shipping date
LGT-MPW-IR-13	800nm	01/06/20	22/06/20	21/09/20
LGT-MPW-IR-14	800nm	01/09/20	22/09/20	15/12/20
LGT-MPW-IR-15	800nm	13/11/20	27/11/20	12/03/21
LGT-MPW-VIS-04	150nm	01/06/20	22/06/20	21/09/20
LGT-MPW-VIS-05	150nm	01/09/20	22/09/20	15/12/20
LGT-MPW-VIS-06	150nm	13/11/20	27/11/20	12/03/21

ABOUT

LIGENTEC is your independent **Swiss** manufacturing partner for Photonic Integrated Circuits (PIC). We provide next generation silicon photonics for customers in high-tech areas such as Communication, Quantum technologies, LiDAR and Sensing. LIGENTEC commercializes the all-nitride-core technology, with which LIGENTEC enables the customers to develop their products in the industrial revolution 4.0.

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Stay
Tuned

