Discrete-Mode Lasers for LIDAR Applications
Our Story.

Established 2001
Dublin, Ireland

IP protected over 15 patents
35 employees

Core technology developed at Tyndall Institute and Trinity College Dublin (Semiconductor Photonics Group)

Eblana Photonics
The Wavelengths. 657 – 2350 nm.
Markets.

Sensing

Metrology
Line widths (100kHz) for ultra-precision atomic clock, LIDAR, interferometry, test & measurements.

Communications
Eblana has been supplying lasers into the high volume, fiber optic communications industry for more than a decade.
DM Technology

DM TECHNOLOGY ADVANTAGES

• Simplified Manufacturing Process
• Consistency and Uniformity
• Monolithic Low Linewidth
• Flexibility
• Scalability
Narrow Linewidth DM Laser

- Discrete Mode lasers demonstrate lower linewidths than equivalent DFBs due to the laser structure.

- Linewidths of 100 kHz for standard 1550 nm narrow linewidth DM laser.

- Demonstrated linewidths of 50 kHz in monolithic chip (no external cavity).
DM Laser with Integrated SOA

- Individually addressable laser and SOA sections – SOA acts as amplifier and gate for pulsing output.

- Laser chip is monolithic - ridge incorporates slotted features in order to produce single mode emission.

- Curved output in order to reduce reflections
DM Array with MMI

Single Output

Biased MMI Section

Four individually addressable lasers

4x1 IDM MMI Peak Wavelength

Peak Wavelength (nm) vs. Bias Current (mA) for lasers 1 to 4.
• Design of custom drive electronics for LIDAR emitters – discrete and ASIC.

• OEM modules for packaged laser and PIC testing.

• Demonstrated temporal extinction ratios of 60dB for ToF LIDAR measurements with 2ns pulse width using standard Eblana 1550nm DM laser.
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<th>Why work with Eblana?</th>
<th>Small team mainly focused on design - ability to respond with agility to customer requirements, but with the ability to scale.</th>
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<td>What are we looking for?</td>
<td>Partnerships with LIDAR sensor builders working in the 1550nm window, looking for a flexible and responsive partner.</td>
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