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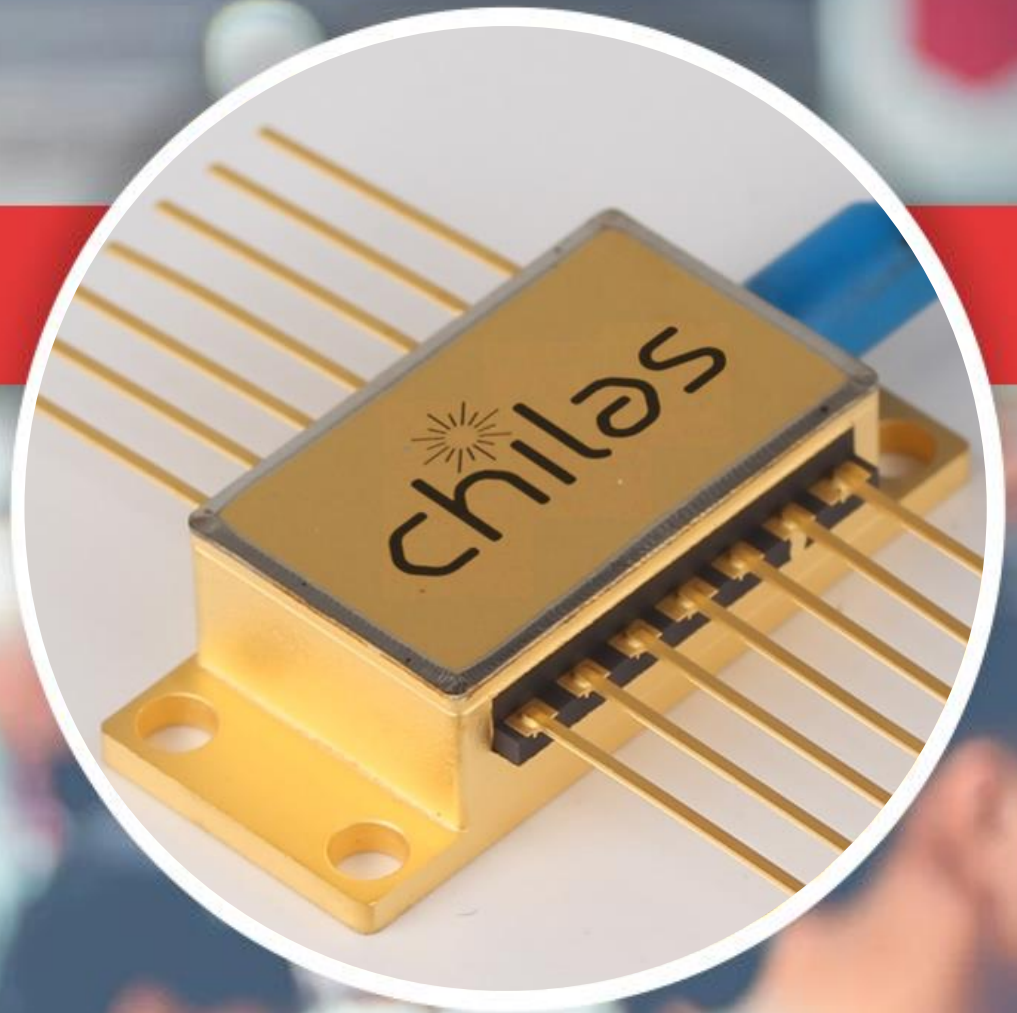
Lasers that Harvest the Best of Both InP and SiN Worlds

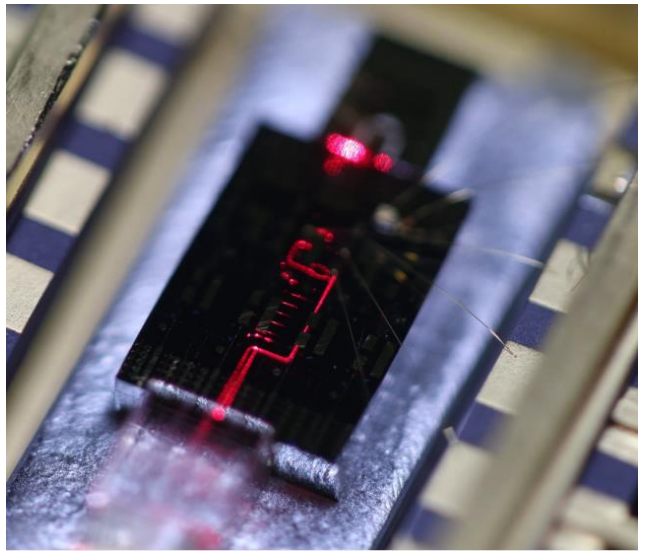
chilas

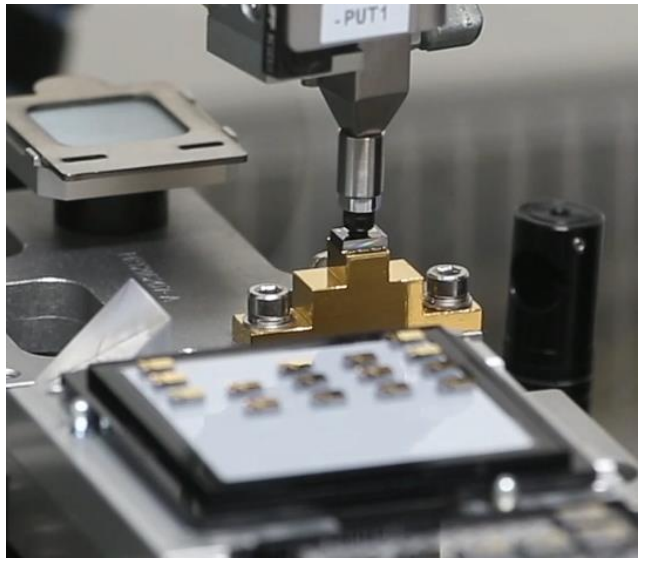
EPIC Online technology Meeting on Hybrid Photonic Integrated Circuits



Chilas Ecosystem

- Chilas was founded in December 2018 as spin-off of LioniX International.
- Chilas has offices in Eindhoven and Enschede, the Netherlands.
- Chilas develops and commercializes ultra-narrow linewidth external cavity semiconductor lasers.
- The Ecosystem of Chilas consist of
  - LioniX International,
  - PHIX and
  - QuiX

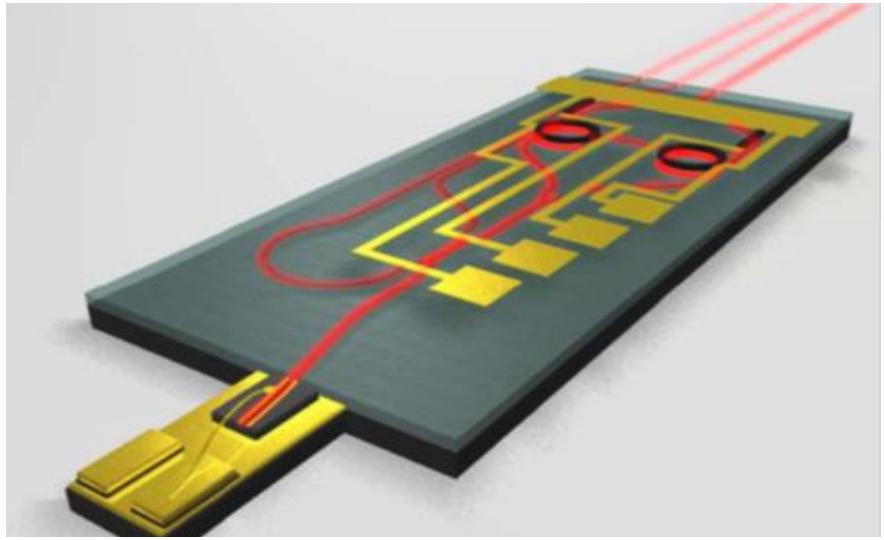


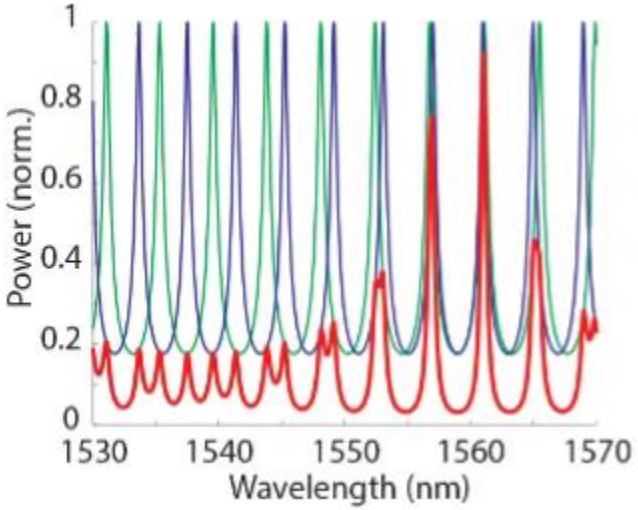


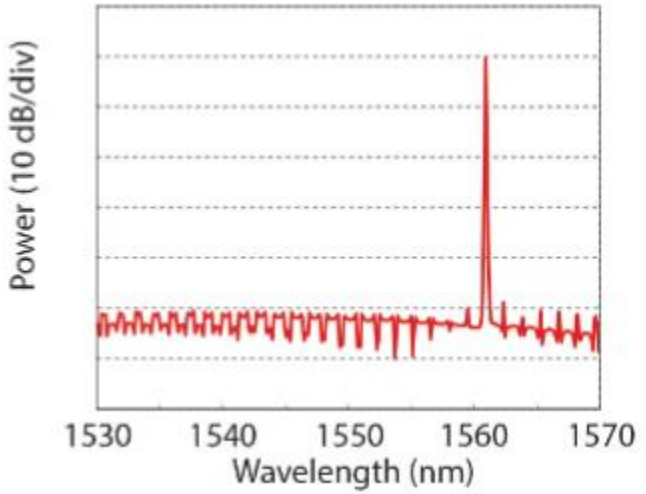
Hybrid Technology

Chilas' laser comprises:

- An InP semiconductor optical amplifier (SOA) as gain medium Providing **high output powers**
- and a low loss Si_3N_4 waveguide circuit as external cavity. Giving the laser its wavelength agile character and **narrow linewidth**
- The SOA is butt-coupled to the external cavity.
- Two coupled micro-ring resonators (MRRs) with slightly different FSR in the cavity ensure **broad tuning of the wavelength** by Vernier effect.

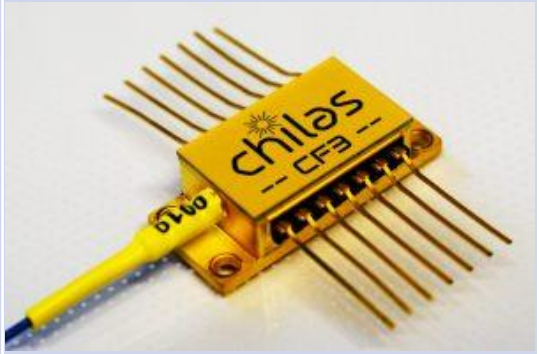
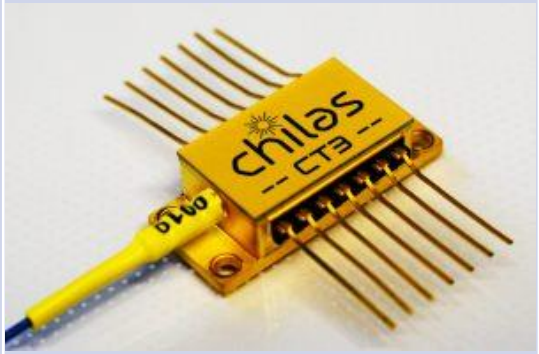




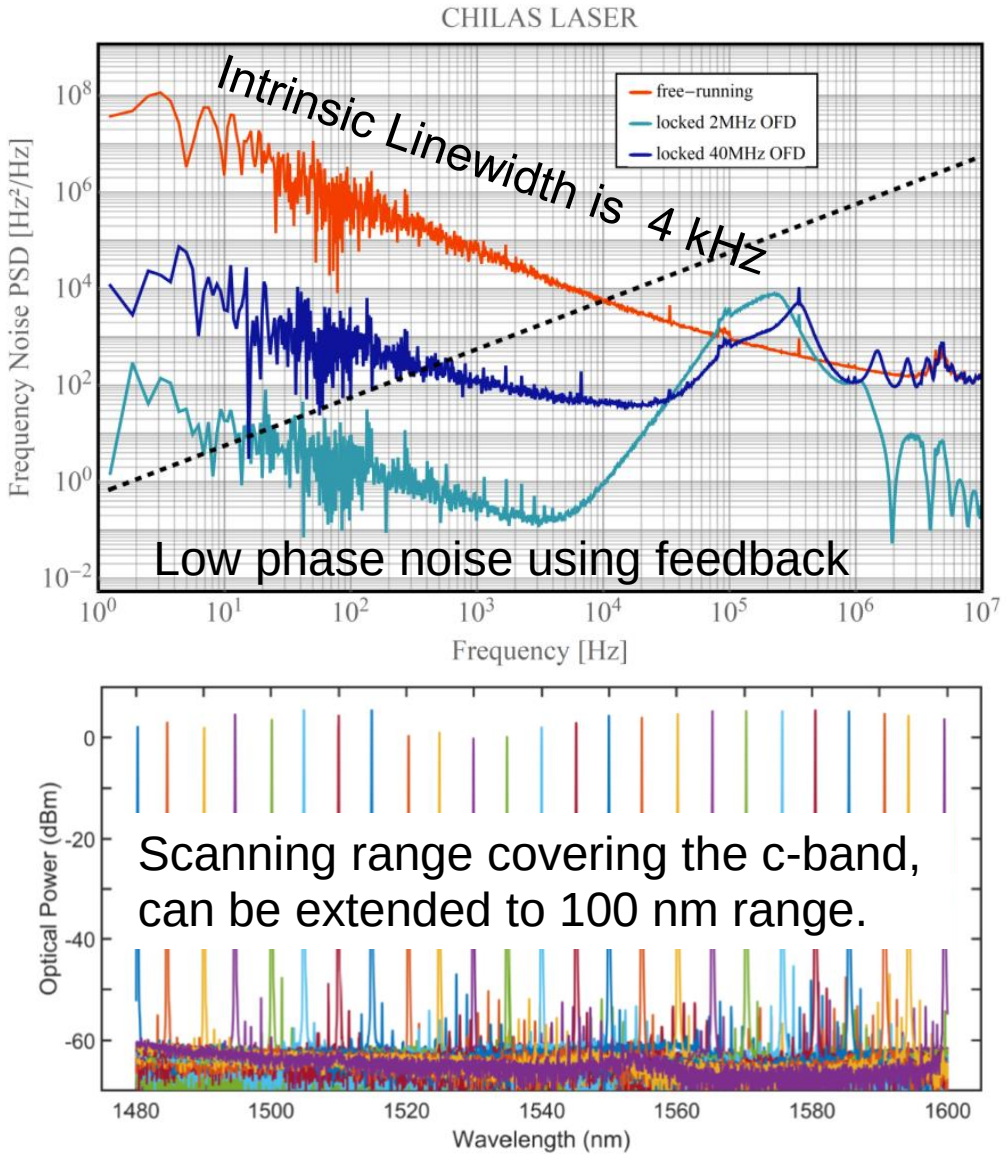


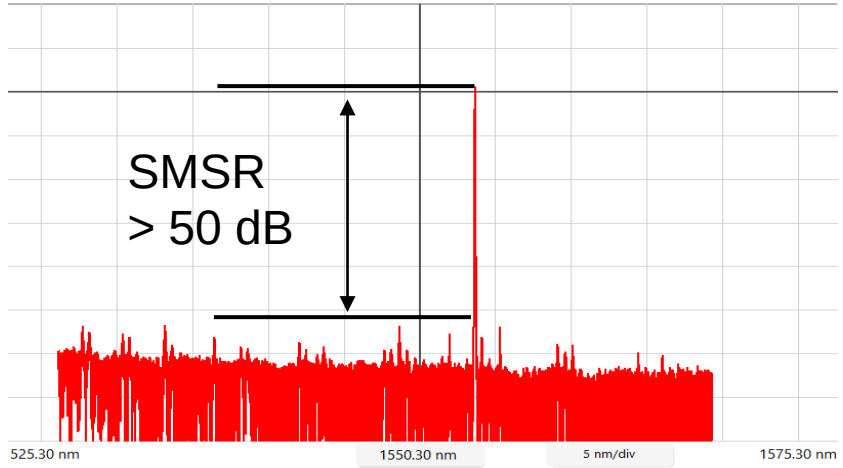
Chilas Products

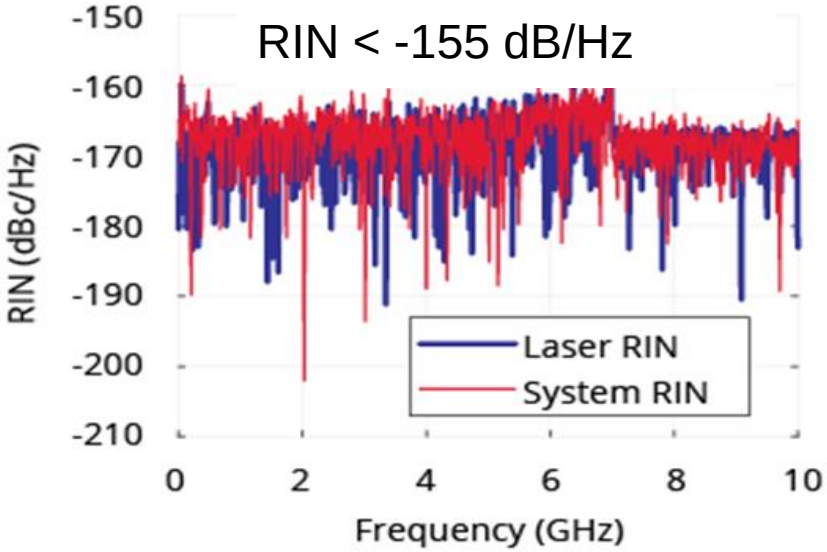
Chilas offers the following standard products.

General Characteristics	CF3	CT3	Driver electronics
• 14-pins butterfly package • Temperature stabilized • PM fiber pigtail • Proven long-term reliability			
	• < 5 kHz linewidth • >13 dBm output power • 1550 nm wavelength • 10 µrad phase noise @100 Hz	• < 10 kHz linewidth • >10 dBm output power • C-band tunability • 30 µrad phase noise @100 Hz	• Ultra-low noise • C-band tunability • Low SWaP • Built-in driver • Micro-USB interface • Tuning software

Chilas Laser performance



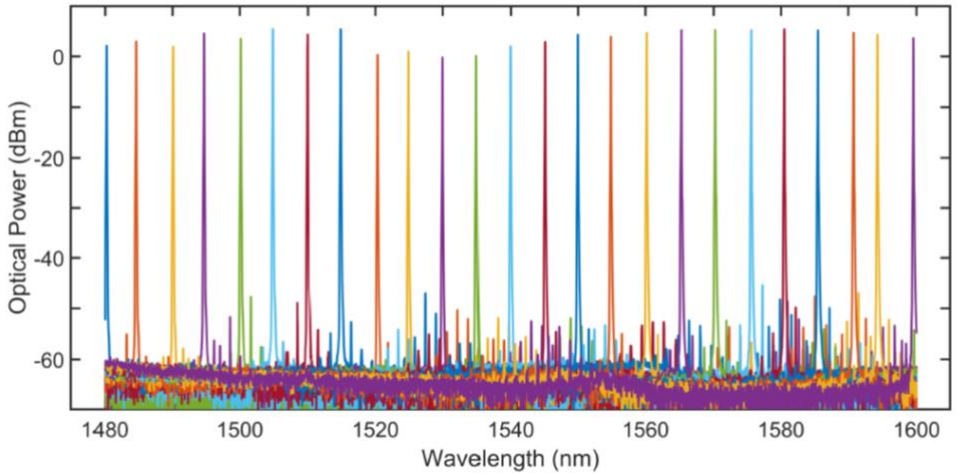




Chilas Laser Development

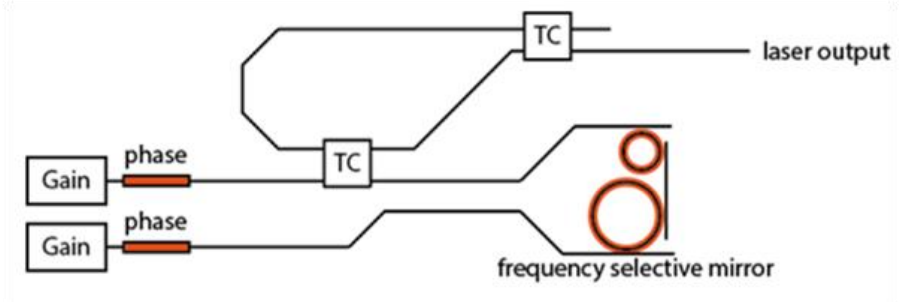
Extended wavelength ranges, now available:

- S-C-L 1480-1600 nm
- NIR 850 ± 15 nm
- VIS 680 ± 15 nm



Mid 2022:

- High power >100 mW using dual gain in butterfly housing
- Integrated wavelength tracking



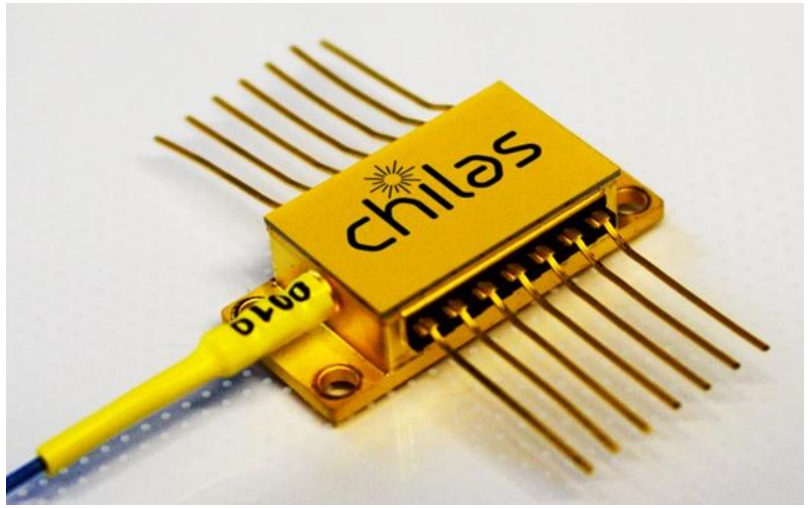
Any wavelength on demand!

- 400 nm - 2500 nm

Product applications

Chilas ultra-narrow linewidth, large tuning range, low noise and high-power lasers can be used in a wide range of applications

- Fiber optic sensors
- LiDAR
- Coherent communications
- Biomedical, OCT
- Microwave photonics
- Spectroscopy
- Telecom instrumentation
- Atoms cooling
- Quantum computation



Chilas powers your system