

Cascade Laser Components & Systems: Technology and Market trends

Cascade laser market: Will it eventually take off ? And for which applications ?

REPORT OUTLINE

- Title: *Cascade Laser Components & Systems: Technology and Market Trends*
- Market & Technology Report
- PDF
- 248 slides
- € 3 990 - Regular price

KEY FEATURES OF THE REPORT

- Overview of Cascade Laser technologies (sources, detectors, systems...) and applications
- Main challenges to be addressed both on technology side and application side in the next years
- Market forecasts in revenue and volume by application until 2024
- Market analysis and list of players

RELATED REPORTS

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THE CASCADE LASER MARKET WILL REACH AROUND 1.7B\$ IN 2024

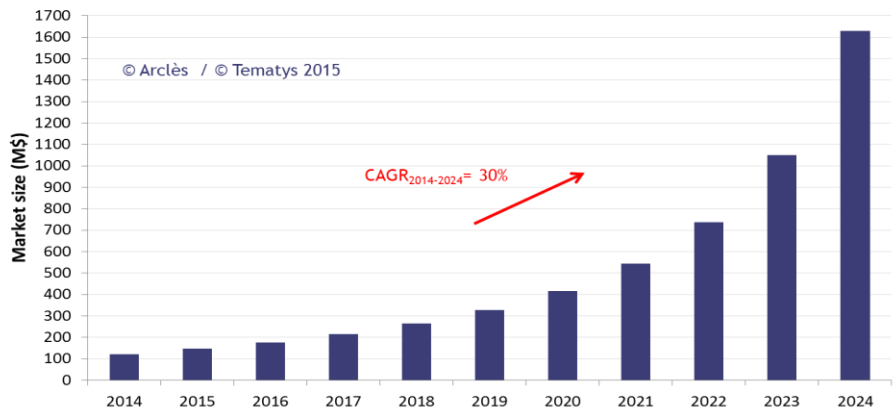
The Cascade Laser (CL) market is expected to grow from 148M\$ in 2015 up to 1.7B\$ in 2024 with a strong CAGR increase due to the maturation of commercial products using CL components.

The first CL-based systems for applications outside research labs were sold in the 2000's. CL-based systems for spectroscopy or imaging are still expensive (often above 50-100 k\$) compared to existing technologies (UV, NIR...) despite around 4000-5000 CL sources are sold yearly in 2014-2015. Multigas detection for industrial applications is expected to be the biggest market for the next 5 years.

However, transports and healthcare applications are expected to take off and become the biggest markets in longer terms, representing more than 50% of the total business. In healthcare, CLs sources are a key component for Point-of-Care devices. In transport, the 3 main applications will be: exhaust analysis for engine design and certification; vehicle emissions monitoring and jet fuel control.

The present report provides extensive market data in M\$ from 2014 to 2024 for different applications: Industry, Security & Defence, Environment, Health Care, Transports.

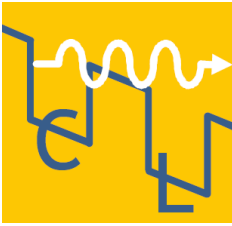
Global Cascade Laser Market (2014-2024)



CL TECHNOLOGY IS MATURE AND IS ALREADY A BUSINESS

The CL market is a young market. The CL based first systems were sold in the 2000's. Currently, the MIR spectrum is more and more adopted as it enlarges the capabilities of spectroscopy. CL technology, thanks to its narrow linewidth and good wavelength tunability, is suitable for applications like industrial sensing: explosives or

chemical detection; or light sources for IR imaging systems, medical diagnostic and spectroscopic applications. Today, the segments industry, environment and transports are the most mature and the biggest ones, while the military applications represent by far the biggest part of the security and defence application market.



AUTHORS



Eric Margoto has 25 years of experience in worldwide market analysis and strategic marketing. He is an expert in Electronics, Optronics, Micro-electronics, Nanotechnologies, Telecom. He spent most of his career at THALES and is now Consultant at Arcles.



Yves Fazilleau has 40 years of experience in Photonics & Optronics. He was researcher at the ONERA, a French aeronautics, space and Defense research lab, and at the French DoD. Expert engineer, Yves has worked on many equipment evaluations and managed many R&D programs. His now Consultant at Arcles.

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Functionalities

Applications of CL technologies	Control	Analysis	Monitoring	Safety	Imaging	Transmission
Industry	✓	✓	✓	✓		
Security & Defence		✓	✓	✓	✓	✓
Environment	✓	✓	✓			
Health Care		✓		✓	✓	
Transports	✓	✓	✓			

CL sources are well suited to fulfil the increasing need for highly miniaturized contactless technologies which should show the following features: high sensitivity, low integration cost, ease of use, high repetition rate, very small size, ATEX compatibility.

Several spectroscopy techniques exist (direct absorption spectroscopy, modulation spectroscopy), but still need to be industrialized and fully characterized for certification issues in some applications.

THE NEED FOR HIGH PERFORMANCE DETECTION IN MANY FIELDS IS A GREAT OPPORTUNITY FOR CASCADE LASER TECHNOLOGY

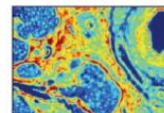
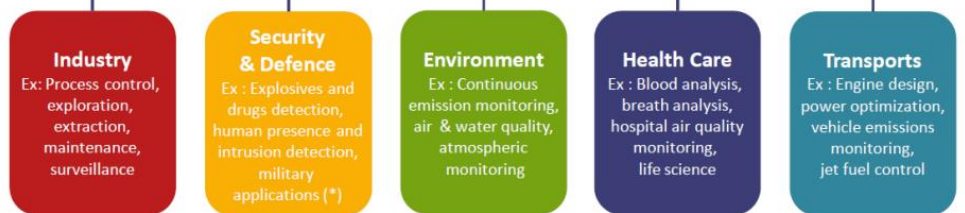
MIR spectrum enlarges the adoption of spectroscopy along with NIR and UV-VIS and CL sources are becoming a new competing technology for spectroscopy, imaging and transmission applications.

the challenges to be faced in more than 25 market segments. It also provides an application roadmap for the next decade.

This report provides a study of CL components, systems and application markets. It evaluates the potential and

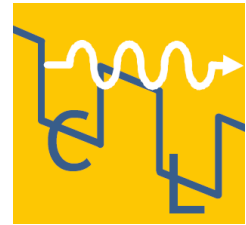
Cascade Laser Applications

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OBJECTIVES OF THE REPORT

- To provide an overview of Cascade Laser (CL) based systems on the market and under development, including the CL source, the driver, the beam transport accessories...
- To define and analyze the different business segments of the market
- To provide a market forecast until 2024 for each application
- To underline main challenges to be addressed both on technology side and application side on the short, mid and long-term
- To identify CL main industries and R&D players worldwide.



COMPANIES MENTIONED IN THE REPORT

ABB, ADTech Optics, Aerodyne Research, Aerovia, Airbus, Airoptic, Alpes Laser, Anasys Instruments, AP2E, Arclès, ART Photonics, AVL, BioOptics World, Block Engineering, Bruker, Cascade Technologies, Ceramoptec, Clinicon, DARPA, Daylight Solutions, Durasens, Elbit Systems, EOS Photonics, Eralytics, ESA, Gasera, Fibre Photonics, Frankfurt Laser Company, Genia Photonics, Glycolaser, Hamamatsu Photonics, Horiba, Infrared Fiber Systems, Infrasin, IR Flex, Laser Components, LaserMax, Le Verre Fluoré, Leoni, Loccioni, Longwave Photonics, LSE Monitors, LuxarCare, Lytid, Mesh, Mirsense, Mirthe, Molex, Nanoplus GmbH, NCBI, Neo Monitors, Neoplas Control, Newport, Northrop Grumman, Omniguide, Opto Knowledge, Opton Laser International, OptranMIR, Pacific Northwest, Perfos, Picarro, Photonics, Photran, Physical Sciences Inc, Polymicro, Pranalytica, Procal, Quantared Technologies, QuantaSpec, Redshift Systems, Sacher Lasertechnik, SelenOptics, Selex ES, Spectro Scientific, TDL Sensors Ltd, Thematys, Thermo Scientific, ThorLabs, Toshiba, TU Wien, ULIS, Vigo System, Wavelengths Electronics, Wilks IR, WR Systems ...

AUTHORS



Benoît d'Humières is an expert in Optics, Electronics and Instrumentation for industrial and research applications.

He has run many marketing and technological studies for major companies (THALES, ESSILOR, EDF...) and Research institutions.

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