

Amplitude

Femtosecond laser & Ophthalmology

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EPIC Online Technology Meeting on Ophthalmology

Monday 29th June



Amplitude

Summary

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Who Are We ?

02

**Our Fields of
Expertise**

03

Ophthalmology

01

Who Are We ?

Leading Manufacturer of Ultrafast Lasers

01 Who Are We ?

Worldwide Leader in Ultrafast Lasers Since 2001



01 Who Are We ?

Key Facts



Expert manufacturer in **ultrafast laser** technology



25 000 Products sold around the world



Financing capacity quoted as « **very strong** » by Banque de France



40+ Countries served



Innovative & visionary company, created in 2001



400+ employees worldwide



...**9 offices and production plants** around the world.



15 000 M² of production area



Amplitude Laser Group Headquarters, near Bordeaux, France

02

Our Fields of Expertise

3 Main Markets

400+ employees working with the same **passion** and delivering the **best products** for 3 market fields.

Science

- > Life science
- > High Intensity and Energy Physics
- > Spectroscopy and Imaging
- > Instrumentation



Industry

- > Display
- > Semiconductor
- > Consumer Electronics
- > Micro processing

Medical

- > Ophthalmology
- > Protontherapy
- > X-Ray Imaging
- > Medical Device Manufacturing

03

Ophthalmology

A long and proven story

Ophthalmology

A long story starting with an accident

- > 1993 : a student from CUOS accidentally got short-pulse laser beam in his eye
- > The ophthalmologist (Ronald Kurtz, MD) who examined the student found out that the damage in the cornea was simply perfect.
- > The prototype of the first ophthalmic surgical FS laser prototype was designed by Dr Juhasz and his associates at the CUOS.
- > The IntraLase Corporation was founded in 1997 in Michigan and The IntraLase Pulsion FS laser was approved for use by the U.S. Food and Drug Administration (FDA) for lamellar corneal surgery in January 2000
- > LenSx received FDA clearance for:
 - > Anterior capsulotomies (August 2009)
 - > Corneal incisions (December 2009)
- > First laser cataract surgery in the United States on 50 consecutive eyes (Stephen G. Slade, MD, the medical director for LenSx, Feb 2010)
- > The pathway to commercial viability for LensAR's femtosecond laser for Cataract surgery traces back to an original intention of presbyopic correction.

03 Applications

Ophthalmology

A proven story

Corneal grafting

Example of laser used:
Satsuma



Refractive surgery

Example of laser used:
Goji



IOL in-situ modifications

Example of laser used:
Satsuma Niji



Presbyopia treatment

Example of laser used:
Goji



Cataract surgery

Example of laser used:
Satsuma

- > 2003: First femtosecond lasers designed for eye surgery applications
- > Quality driven: ISO13485 certified
- > Thousands of Amplitude lasers on 5 continents

Ophthalmology

What Future will bring ?



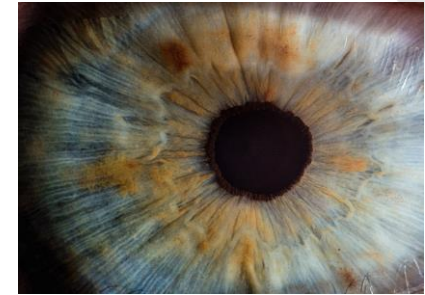
- > Existing techniques are still being developed:
 - > Refractive : **Corneal lenticule extraction** for refractive correction
 - > Refractive correction in Cataract surgery: **IOL In situ modifications**. Fine-tune the refractive power post-operatively

- > New Techniques may design the future of Ophthalmology with FS Lasers:
 - > Cataract : **Photoemulsification**
 - > **Refractive** : LIRIC, Laser Induced Refractive Index Change : create optically superior Fresnel lens patterns to correct presbyopia, myopia, hyperopia, astigmatism and higher order aberrations
 - > **Glaucoma**: femto-second Laser sclerostomy : Alternative for minimally invasive glaucoma surgical therapy
 - > **Presbyopia**: Using a fs-Laser to soften the Lens
 - > **Posterior segment** to be the next field of opportunities ? Laser beam to replace thin and hard-handling hand instruments for **retinal surgery**.

03 Applications

Ophthalmology

Stakes for the future needs



- > What can you do for Amplitude ?
 - > Provide the best innovative components to continuously improve the performance of our Laser sources
 - > Develop inter-disciplinary collaborations to adress potential new applications

- > What Amplitude can do for you ?
 - > Provide the world most advanced lasers for ophthalmology applications
 - > Be an innovative partner to build the future of Ophthalmology

Thank you!

You can find us:

www.amplitude-laser.com

