

Press Release

Innovative future technology for ultra-precise corneal surgery Groundbreaking SmartTech concept laser system introduced at the ESCRS

Kleinostheim, Germany, September 2010

SCHWIND introduces for the first time at the ESCRS in Paris a groundbreaking concept laser system that represents a paradigm shift in refractive and therapeutic corneal surgery. The innovative, multifunctional and mobile SmartTech Laser impressively substantiates the company's claim to technological leadership. Furthermore, significantly reduced life cycle costs are projected. The laser system is based on nanosecond laser technology and uses the principle of plasma creation for separation of the corneal tissue. Instead of a highly complex technology of a femtosecond laser, an innovative microchip laser is used. Its short wavelength in the UV range (355 nm) and aberration-free optical system ensure extreme precision. The focal spot size of the SmartTech Laser is just one third of the spot size of standard femtosecond lasers. The low-density plasma combined with the short wavelength ensures definitely finer structures. That leads, for example, to more precise cuts and smoother cutting surfaces in LASIK flap procedures, as well as an increased safety in flap preparation. The flap can be lifted just as easily as with the mechanical microkeratome. Besides its use in refractive surgery, the SmartTech Laser will offer a highly-developed platform for therapeutic applications: These include lamellar keratoplasty as well as corneal rings and corneal inlays or the treatment of astigmatic keratotomy.

„The SmartTech Laser is designed in such a manner that it offers greatest safety for the patient and highest reliability for the surgeon. For that purpose it is

equipped with a highly precise optical system and a perfectly guided microchip laser“, says project director Stefan Schwed.

Significantly reduced life-cycle costs and high mobility

The concept laser system aims to keep costs during the entire product life cycle as low as possible. Still, refractive surgeons refer in comparative presentations to the very high life cycle costs of a femtosecond laser compared with a mechanical microkeratome. With the SmartTech Laser, users will benefit from an investment providing low maintenance costs and high operating safety. Furthermore, the SmartTech Laser, through its highly compact construction and its low weight, can be used with the SCHWIND AMARIS product family as well as in combination with all standard excimer laser systems on the market.

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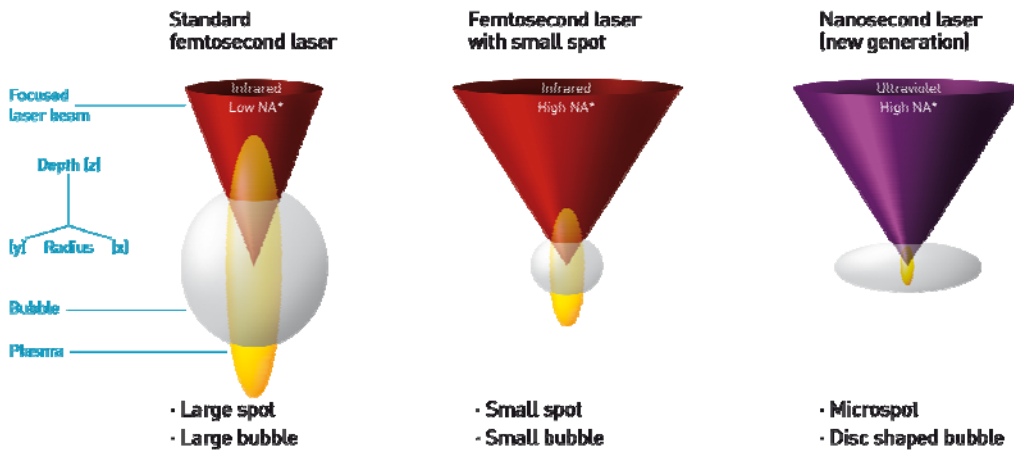
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SmartTech concept laser system

Laser-tissue interaction photodisruption



~3x shorter wavelength → ~3x smaller spot → Better resolution (especially in depth)
 Nanosecond pulses → Disc shaped bubble → Low total pulse duration → Low total pulse energy
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Faster treatment

Simulated for the same pulse energy and pulse frequency

*NA = numerical aperture